

### **3.0 EXISTING AND FUTURE NO-BUILD CONDITIONS**

To determine if there are deficiencies or problems with the existing highway system, a detailed analysis was completed examining the existing highway characteristics and geometrics, traffic volumes, truck traffic, levels of service, travel times, crash rates, and other key issues. The analysis considered current and future traffic conditions assuming no changes to the existing highway. In support of the analysis, highway and traffic data was collected from a variety of sources including:

- KYTC Highway Information System database
- KYTC District 7 data sources
- Study area field reviews
- 24-hours vehicle classification counts
- Various KYTC Division of Planning data sources

#### **3.1 Existing Highway Characteristics and Geometrics**

Within the study area, the major interstate and US highways include:

- I-75
- US 27
- US 25

Other state maintained roads that were evaluated as part of this study include:

- KY 169
- KY 1974
- KY 1156
- KY 1975
- KY 876
- KY 595
- KY 1541
- KY 1980
- KY 1981
- KY 39
- KY 1984
- KY 3055
- KY 1985

Also, Man O' War Boulevard in Fayette County, owned and maintained by the Lexington-Fayette Urban County Government, was included in the analysis.

A highway characteristics summary is included as **Table 1**. **Figure 2** shows the functional classification for all major study area highways.

Table 1: Study Area Highway Characteristics Summary

Route	Section	County	Begin Milepoint	End Milepoint	Section Length (miles)	Functional Class	Facility Type	Lane Width (feet)	Shoulder Width (feet)	Median Type	Median Width (feet)	% No Passing Zones	Posted Speed Limit (MPH)	HCS Speed	Most Recent ADT	Count Station	Year	Growth Rate	2007 ADT	% Trucks	Year of Truck Data	2040 ADT	2040 % Trucks																	
US 27X (Downtown Nicholasville)	1	Jessamine	0.0 (South of Nicholasville)	0.23 (Southbrook Drive)	0.23	Rural Minor Arterial	2 Lane Undivided Hwy	12	8	none	0	0%	55		10,200	A62	2006	0.9%	10,300	10.3%	2004	13,800	16.8%																	
	2	Jessamine	0.23 (Southbrook Drive)	0.835 (John C Watts Drive)	0.61	Urban Minor Arterial Street		11	1				45-55	55		11,300	A40	2006				0.7%		11,400	14,400															
	3	Jessamine	0.835 (John C Watts Drive)	1.075 (Longview Drive)	0.24			11-15	0-1				35-45	45		16,400	A64	2006				0.2%		16,400	17,500															
	4	Jessamine	1.075 (Longview Drive)	1.305 (Edgewood Drive)	0.23			15	0	35			21,500	A24	2006	1.3%	21,800	33,400																						
	5	Jessamine	1.305 (Edgewood Drive)	1.586 (Natchez Trace)	0.28							12		1	25-35	35	20,000	A16	2005			0.5%		20,200	23,800															
	6	Jessamine	1.586 (Natchez Trace)	1.88 (Brown Street)	0.29			12-18	25	24,700			A32			2005	0.6%	25,000	30,500																					
	7	Jessamine	1.88 (Brown Street)	2.112 (Chestnut Street)	0.23			14-16	1	35		26,000	A07	2004	0.9%	26,700	35,900																							
	8	Jessamine	2.112 (Chestnut Street)	2.18 (KY 39/KY 29)	0.07								13-16	1-3	25,800	A81	2004	2.4%	27,700			60,600																		
	9	Jessamine	2.18 (KY 39/KY 29)	2.38 (KY 169)	0.20											12-13	1	25,800	A81			2004		2.4%	27,700	60,600														
	10	Jessamine	2.38 (KY 169)	2.882 (Duncan Street)	0.50			12-13	1-3	25,800		A81							2004			2.4%		27,700	60,600															
	11	Jessamine	2.882 (Duncan Street)	3.89 (US 27 Bypass)	1.01							12-13	1-3	25,800	A81				2004			2.4%		27,700	60,600															
US 27 (South and North of Downtown)	1	Jessamine	0.0 (Garrard-Jessamine County Line)	1.115 (South of Old Danville Road)	1.12	Urban Principal Arterial	4 Lane Divided Highway	12	10	Concrete Barrier and Raised Mountable	2				100%	55		19,100	P65	2006	0.3%	19,200	8.9%	2004	21,200	14.5%														
	2	Jessamine	1.115 (South of Old Danville Road)	3.826 (Greystone Drive/KY 1268)	2.71					Depressed	16-28		538	2005			3.7%		22,600	75,000																				
	3	Jessamine	3.826 (Greystone Drive/KY 1268)	6.011 (US 27 Bypass)	2.19					Raised Mountable	12-24	100%	55				37,200		006	2005	2.0%				38,700		74,400													
	4	Jessamine	10.827 (US 27 Bypass)	11.016 (South of Old US 27 ROW)	0.19	Urban Principal Arterial	4 Lane Divided Highway	12	10					none	0	42%						35,500					009	2004	1.5%	37,100	60,600									
	5	Jessamine	11.016 (South of Old US 27 ROW)	13.695 (Industry Parkway)	2.68													Rural Principal Arterial													4 Lane Undivided Highway	12	10	none	0	42%		35,500	009	2004
	6	Jessamine	13.695 (Industry Parkway)	14.807 (KY 1980)	1.11					Rural Principal Arterial	4 Lane Undivided Highway	12																									10			
	7	Jessamine	14.807 (KY 1980)	15.278 (Jessamine-Fayette County Line)	0.47	Rural Principal Arterial	4 Lane Undivided Highway	12	10					none	0	42%				35,500	009	2004			1.5%		37,100	60,600												
	8	Fayette	0.0 (Fayette-Jessamine Co. Line)	0.465 (Cobblestone Road)	0.47								Urban Principal Arterial				4 Lane Undivided Highway	12	10									none	0	N/A	55		53,700	C85	2006	3.0%		55,300	146,700	0.0%
	9	Fayette	0.465 (Cobblestone Road)	0.808 (South of Toronto Road)	0.34					4 Lane Divided Highway	11-12	0																			Raised Mountable	15					55			
	10	Fayette	0.808 (South of Toronto Road)	0.956 (Man O War)	0.15	4 or 5 Lane Undivided Highway	11-12	none	0					45-55		65,700				353	2007	3.6%			65,700		211,100													
I-75	1	Madison	87.185 (KY 876)	89.802 (US 25)	2.62					Urban Interstate	6 Lane Divided Highway	12	10				Depressed	3	N/A				65			53,700		607	2007	2.4%	53,700	16.0%	2004	117,500	26.2%					
	2	Madison	89.802 (US 25)	91.1 (North of US 25)	1.30	Rural Interstate	Guardrail Barrier	30		65,900				753	2007	3.3%	65,900	192,400																						
	3	Madison	91.1 (North of US 25)	92.1 (North of Lexington Access Road)	1.00		Depressed	60-200																																
	4	Madison	92.1 (North of Lexington Access Road)	94.295 (South of KY 627)	2.20		Concrete Barrier	3																																
	5	Madison	94.295 (South of KY 627)	94.73 (KY 627)	0.44		Concrete Barrier or Depressed	3 or 50-100												62,200	757	2007		2.8%	62,200	154,700														
	6	Madison	94.73 (KY 627)	97.038 (US 25)	2.31		Concrete Barrier	3												65,700	353	2007		3.6%	65,700	211,100														
	7	Madison	97.038 (US 25)	97.703 (Madison-Fayette County Line)	0.67		Concrete Barrier	3												64,300	P90	2006		1.7%	65,400	114,100														
	8	Fayette	97.703 (Madison-Fayette County Line)	98.516 (US 25)	0.81		Concrete Barrier or Depressed	3 or 36-87												53,100	336	2007		3.0%	53,100	140,800														
	9	Fayette	98.516 (US 25)	103.89 (KY 418)	5.37		Concrete Barrier	3												53,100	336	2007		3.0%	53,100	140,800														
	10	Fayette	103.89 (KY 418)	108.21 (KY 1425 Man-O-War Underpass)	4.32		Concrete Barrier	3												53,100	336	2007		3.0%	53,100	140,800														

\*Truck Percentages in italics were found based on 2004 Traffic Forecasting Report

Table 1: Study Area Highway Characteristics Summary (Cont.)

Route	Section	County	Begin Milepoint	End Milepoint	Section Length (miles)	Functional Class	Facility Type	Lane Width (feet)	Shoulder Width (feet)	Median Type	Median Width (feet)	% No Passing Zones	Posted Speed Limit (MPH)	HCS Speed	Most Recent ADT	Count Station	Year	Growth Rate	2007 ADT	% Trucks	Year of Truck Data	2040 ADT	2040 % Trucks										
US 25	1	Madison	20.255 (I-75 Bridge)	20.342 (North of I-75 Bridge)	0.09	Urban Principal Arterial	5 Lane Divided Highway	12	10	Raised Non-mountable	4	100%	45		13,400	B01	2006	3.0%	13,800	6.9%		36,600	11.3%										
	2	Madison	20.342 (North of I-75 Bridge)	20.49 (Keeneland Drive)	0.09		4 Lane Divided Highway	12	2-10	Raised Non-mountable	4																						
	3	Madison	20.49 (Keeneland Drive)	20.573 (Brandy Lane)	0.08		4 Lane Undivided Highway	12	2	none	0			0%																			
	4	Madison	20.573 (Brandy Lane)	20.771 (Keystone Drive)	0.20		2 Lane Undivided Highway	12	2																								
	5	Madison	20.771 (Keystone Drive)	20.964 (KY 1156)	0.19			11	1																								
	6	Madison	20.964 (KY 1156)	21.139 (North of KY 1156)	0.18							45-55	45	5,790								780	2005	2.5%	6,100	12.4%		13,800	20.3%				
	7	Madison	21.139 (North of KY 1156)	24.076 (Clay Lane)	2.94	25%						55	3,470	778	2006	2.4%	3,600	7,900															
	8	Madison	24.076 (Clay Lane)	25.373 (KY 627/KY 3055)	1.30	60%						55	2,620	756	2004	2.4%	2,800	6,100															
	9	Madison	25.373 (KY 627/KY 3055)	28.161 (KY 2884)	2.79	Rural Major Collector	2 Lane Undivided Highway	11	1			none	0	29%	55																		
	10	Fayette	0 (South Limits of I-75 Interchange)	.366 (North of I-75 NB Ramps)	0.37					Rural Minor Arterial	2 Lane Undivided Highway			12	10	none	0	20%	55		3,120	367	2006	0.7%	3,100	10.3%		3,900	16.8%				
	11	Fayette	.366 (North of I-75 NB Ramps)	1.829 (South of Elk Lick Falls Road)	1.46									11	1																		
	12	Fayette	1.829 (South of Elk Lick Falls Road)	2.876 (North of Turner Station Road)	1.05									12	10																		
	13	Fayette	2.876 (North of Turner Station Road)	4.832 (KY 1975)	1.96									11	10					40%								4,310		404	2006	1.4%	4,400
	14	Fayette	4.832 (KY 1975)	8.144 (KY 418)	3.31																												
	15	Fayette	8.144 (KY 418)	9.734 (Man O War Boulevard)	1.59	Urban Principal Arterial	4 Lane Divided Highway	12	0-10	Raised Non-mountable/de pressed	16-34	N/A	45 -55	55	29,600	G32	2005	1.7%	30,600			53,400	0.0%										
KY 1980	1	Jessamine	3.025 (US 27)	3.68 (West of Leeburton Road)	0.66	Rural Major Collector	2 Lane Undivided Highway	8	3	none	0	N/A	55		3,110	008	2004	1.7%	3,300	10.2%	2004	5,800	16.7%										
	2	Jessamine	3.68 (West of Leeburton Road)	4.06 (East of Noland Drive)	0.38								45																				
	3	Jessamine	4.06 (East of Noland Drive)	4.69 (Ashgrove Lane)	0.63								35-55	55																			
	4	Jessamine	4.69 (Ashgrove Lane)	5.06 (East of Young Drive)	0.37								35		2,320	001	2005	4.0%	2,500			9,100											
	5	Jessamine	5.06 (East of Young Drive)	6.02 (West of Spurlock Lane)	0.96								55																				
	6	Jessamine	6.02 (West of Spurlock Lane)	6.69 (East of Mackey Pike)	0.67								45																				
	7	Jessamine	6.69 (East of Mackey Pike)	7.451 (Fayette County Line)	0.76								55																				
KY 1974	1	Fayette	0.00 (KY 169)	.16 (South of KY 1975)	0.16	Rural Minor Arterial	2 Lane Undivided Highway	9	1	none	0	N/A	35		859	359	2006	0.8%	900	14.0%		1,200	22.9%										
	2	Fayette	.16 (South of KY 1975)	1.667 (Crawley Lane)	1.51								55									1,430		379	2006	1.5%	1,500	2,500					
	3	Fayette	1.667 (Crawley Lane)	4.228 (DeLong Road)	3.04																	6,250	G23	2005	2.1%	6,500			12,900	14.2%			
	4	Fayette	4.228 (DeLong Road)	4.711 (South of Hickman Creek Bridge)	0.48	Urban Minor Arterial Street																											
	5	Fayette	4.711 (South of Hickman Creek Bridge)	5.443 (KY 1980)	0.73																												
	6	Fayette	5.443 (KY 1980)	7.782 (Man O War Boulevard)	2.34	2-4 Lane Unidivided Highway							12	8-10	none	0	100%	55				8,990	D90	2004	3.5%	10,000			31,100				
KY 1975	1	Fayette	0.00 (KY 1974)	4.463 (Whites Lane)	4.46	Rural Minor Collector	2 Lane Undivided Highway	8	3	none	0	N/A	55		1,190	357	2004	3.2%	1,300	6.1%	2004	3,700	10.0%										
	2	Fayette	4.463 (Whites Lane)	5.410 (US 25)											2,940	368	2006	2.7%	3,000			7,200											
KY 1981	1	Jessamine	0.00 (KY 1541)	2.365 (Marble Creek Lane)	2.37	Rural Minor Collector	2 Lane Undivided Highway	7	3	none	0	N/A	55		648	262	2006	-0.4%	600	10.3%		600	16.8%										
	2	Jessamine	2.365 (Marble Creek Lane)	3.30 (South of KY 169)	0.94			8																									
	3	Jessamine	3.30 (South of KY 169)	3.668 (KY 169)	0.37			Rural Local					35																				
	4	Jessamine	3.668 (KY 169)	3.998 (North of Caveson Way)	0.30	9								55	1,980	259	2004	3.6%	2,200	8.6%	7,100	14.1%											
	5	Jessamine	3.998 (North of Caveson Way)	6.13 (KY 1974 @ Fayette County Line)	2.13	7																											

\*Truck Percentages in italics were found based on 2004 Traffic Forecasting Report

Table 1: Study Area Highway Characteristics Summary (Cont.)

Route	Section	County	Begin Milepoint	End Milepoint	Section Length (miles)	Functional Class	Facility Type	Lane Width (feet)	Shoulder Width (feet)	Median Type	Median Width (feet)	% No Passing Zones	Posted Speed Limit (MPH)	HCS Speed	Most Recent ADT	Count Station	Year	Growth Rate	2007 ADT	% Trucks	Year of Truck Data	2040 ADT	2040 % Trucks									
KY 1984	1	Madison	0.00 (Newby Road)	.751 (West of Kanatzar Lane)	0.75	Rural Local	2 Lane Undivided Highway	7	1	none	0	N/A	55		574	796	2004	4.7%	700	8.6%		3,200	14.1%									
	2	Madison	.751 (West of Kanatzar Lane)	1.051 (West of Haden Heights)	0.30				3																							
	3	Madison	1.051 (West of Haden Heights)	2.06 (KY 169)	1.01				1																							
KY 169	1	Madison	1.349 (I-75 Underpass)	2.240 (Goggins Lane)	0.89	Urban Collector Street	2 Lane Undivided Highway	10	2	none	0	40%	55		5,190	A82	2004	3.0%	5,700	7.8%	2004	15,100	12.7%									
	2	Madison	2.240 (Goggins Lane)	3.082 (Boone Way)	0.84									3,960	799	2005	4.0%	4,300	15,700													
	3	Madison	3.082 (Boone Way)	4.877 (Crutcher Pike)	1.80									1,360	797	2006	1.4%	1,400	2,200													
	4	Madison	4.877 (Crutcher Pike)	6.184 (KY 1984)	1.31									990	795	2004	1.0%	1,000	1,400													
	5	Madison	6.184 (KY 1984)	8.051 (KY 1985)	1.87									586	794	2005	0.5%	600				700										
	6	Madison	8.051 (KY 1985)	8.478 (Buffalo Road)	0.43	8		1																								
	7	Madison	8.478 (Buffalo Road)	11.74 (Ervin Sloan East Road)	3.26																											
	8	Madison	11.74 (Ervin Sloan East Road)	11.869 (KY 1156 / Carvers Ferry Road)	0.13																				414	786	2006	0.2%	400			400
	9	Madison	11.869 (KY 1156 / Carvers Ferry Road)	12.511 (Approach to Valley View Ferry)	0.64																											
	10	Jessamine	0.00 (Approach to Valley View Ferry)	1.939 (South of Newman Road)	1.94	Rural Major Collector	2 Lane Undivided Highway	10	3			10%		549	265	2006	0.9%	600	5.2%	2004	800	8.5%										
	11	Jessamine	1.939 (South of Newman Road)	2.030 (North of KY 1974)	0.09							N/A		1,140	264	2004	2.7%	1,200			2,900											
	12	Jessamine	2.030 (North of KY 1974)	3.598 (South of Burnside Drive)	1.57							10%									11,600											
	13	Jessamine	3.598 (South of Burnside Drive)	4.218 (KY 1981)	0.62							0% or N/A																				
	14	Jessamine	4.218 (KY 1981)	7.733 (Vince Road / Bethany Road)	3.52							0 - 20%		3,460	291	2006	3.6%	3,600			12,300											
	15	Jessamine	7.733 (Vince Road / Bethany Road)	9.482 (Locust Heights)	1.75							10%		4,360	290	2006	3.1%	4,500														
	16	Jessamine	9.482 (Locust Heights)	9.918 (North of Glencove Ave)	0.44							11	2																			
	17	Jessamine	9.918 (North of Glencove Ave)	10.028 (Liberty Street)	0.11	Urban Minor Arterial Street							2-3		35										6,600							
	18	Jessamine	10.028 (Liberty Street)	10.362 (Bell Court)	0.33							11-14	2		25-35	35	3,670	A45			2005		1.7%	3,800								
	19	Jessamine	10.362 (Bell Court)	10.458 (US 27)	0.10							11	1-2		25																	
KY 595	1	Madison	16.014 (KY 876)	17.03 (Dry Branch Road)	1.02	Rural Local	2 Lane Undivided Highway	8	1	none	0	N/A	55		629	587	2004	0.4%	600	8.6%		700	14.1%									
	2	Madison	17.03 (Dry Branch Road)	20.78 (North of Sledd Branch Road)	3.75			7							645	808	2005	4.0%	700			2,600										
	3	Madison	20.78 (North of Sledd Branch Road)	22.212 (New Road)	1.43		1 Lane Highway	12							107	800	2006	1.4%	100			200										
	4	Madison	22.212 (New Road)	24.55 (South of Poosey Ridge Road)	2.34									10																		
	5	Madison	24.55 (South of Poosey Ridge Road)	24.604 (Poosey Ridge Road)	0.05																											
KY 876	1	Madison	0.00 (KY 595)	2.387 (Bogie Mill Road)	2.39	Rural Minor Collector	2 Lane Undivided Highway	8	3	none	0	N/A	55		643	586	2004	2.8%	700	10.3%		1,700	16.8%									
	2	Madison	2.387 (Bogie Mill Road)	3.99 (West of Redwood Drive)	1.60				1						1,340	578	2006	0.2%	1,300			1,400										
	3	Madison	3.99 (West of Redwood Drive)	4.77 (Old Pond Way/Mule Shed Road)	0.78			8-9	1-3						2,330	576	2004	2.4%	2,500			5,500										
	4	Madison	4.77 (Old Pond Way/Mule Shed Road)	5.15 (West of Curtis Pike)	0.38			9	1																							
	5	Madison	5.15 (West of Curtis Pike)	6.528 (Willis Branch Road)	1.38																											
	6	Madison	6.528 (Willis Branch Road)	6.95 (West of Amberly Way)	0.42			10														27,100										
	7	Madison	6.95 (West of Amberly Way)	7.097 (I-75 Ramp)	0.15			6						12,200	A03	2005	2.3%	12,800														

\*Truck Percentages in *italics* were found based on 2004 Traffic Forecasting Report

Table 1: Study Area Highway Characteristics Summary (Cont.)

Route	Section	County	Begin Milepoint	End Milepoint	Section Length (miles)	Functional Class	Facility Type	Lane Width (feet)	Shoulder Width (feet)	Median Type	Median Width (feet)	% No Passing Zones	Posted Speed Limit (MPH)	HCS Speed	Most Recent ADT	Count Station	Year	Growth Rate	2007 ADT	% Trucks	Year of Truck Data	2040 ADT	2040 % Trucks			
KY 1541	1	Jessamine	0 (KY 39)	3.556 (Kissing Ridge Road)	3.56	Rural Minor Collector	2 Lane Undivided Highway	8	3	none	0	N/A	55		90	298	2006	-1.2%	100	10.3%		100	16.8%			
	2	Jessamine	3.556 (Kissing Ridge Road)	4.500 (North of Pollard Pike)	0.94										446	277	2006	2.5%	500			1,100				
	3	Jessamine	4.500 (North of Pollard Pike)	7.000 (North of KY 1981)	2.50										1,240	295	2004	1.9%	1,300			2,400				
	4	Jessamine	7.000 (North of KY 1981)	9.668 (KY 39)	2.67																					
KY 39	1	Jessamine	0.00 (North Bank of Kentucky River)	0.12 (KY 1541)	0.12	Rural Local	2 Lane Undivided Highway	8	3	none	0	N/A	55		111	281	2006	-3.4%	100	7.4%	2004	100	12.1%			
	2	Jessamine	0.12 (KY 1541)	2.454 (KY 1268)	2.33									853	280	2006	1.9%	900				1,700				
	3	Jessamine	2.454 (KY 1268)	3.747 (Big Hickman Creek Bridge)	1.29																					
	4	Jessamine	3.747 (Big Hickman Creek Bridge)	5.56 (North of Old Sulphur Well Road)	1.81																					
	5	Jessamine	5.56 (North of Old Sulphur Well Road)	5.83 (North of Elmfork Road)	0.27	Urban Minor Arterial Street		10					45		3,210	A27	2004	1.5%	3,400			5,600				
	6	Jessamine	5.83 (North of Elmfork Road)	7.550 (KY 1541)	1.72								55													
	7	Jessamine	7.550 (KY 1541)	8.38 (South of Ash Drive)	0.83																					
	8	Jessamine	8.38 (South of Ash Drive)	8.548 (Ash Drive)	0.17			9-10	0-3				35		7,020	A13	2004	2.6%	7,600			17,700				
	9	Jessamine	8.548 (Ash Drive)	8.875 (Miles Road)	0.33																					
	10	Jessamine	8.875 (Miles Road)	9.29 (Hager Lane)	0.42																					
	11	Jessamine	9.29 (Hager Lane)	9.404 (KY 29 / US 27)	0.11			9	0					25												
KY 1156	1	Madison	0.00 (US 25)	.64 (South of Secretariat Drive)	0.64	Urban Collector Street	2 Lane Undivided Highway	8	1	none	0	N/A	35		1,670	781	2004	3.4%	1,800	5.1%	2004	5,400	8.3%			
	2	Madison	.64 (South of Secretariat Drive)	1.352 (Boone Way)	0.71								55									724		782	2005	4.1%
	3	Madison	1.352 (Boone Way)	4.5 (South of Clay Lane)	3.15																					
	4	Madison	4.5 (South of Clay Lane)	5.68 (South of Kentucky River Road)	1.18																					
	5	Madison	5.68 (South of Kentucky River Road)	6.278 (Kentucky River Road)	0.60																					
	6	Madison	6.278 (Kentucky River Road)	8.7 (South of Tate Creek Bridge)	2.42																					
	7	Madison	8.7 (South of Tate Creek Bridge)	9.376 (KY 169)	0.68	9							233	784	2006	0.8%	200					300				
KY 3055	1	Madison	0.00 (White Hall Shrine Road)	1.54 (South of KY 627/US 25)	1.54	Rural Local	2 Lane Undivided Highway	11	3	none	0	N/A	55		107	829	2006	-0.4%	100	8.6%		100	14.1%			
	2	Madison	1.54 (South of KY 627/US 25)	1.593 (KY 627/US 25)	0.05				0																	
KY 1985	1	Madison	0.00 (Whitlock Road / Baldwin Road)	.85 (East of Whitlock and Baldwin)	0.85	Rural Local	2 Lane Undivided Highway	8	1	none	0	N/A	55		365	793	2006	0.6%	400	8.6%		500	14.1%			
	2	Madison	.85 (East of Whitlock and Baldwin)	1.399 (West of Tate Creek Bridge)	0.55			7																		
	3	Madison	1.399 (West of Tate Creek Bridge)	1.499 (KY 169)	0.10			8	3																	
CS 4524 (Man O' War Blvd)	1	Fayette	6.561 (Nicholasville Road)	8.566 (Tates Creek Road)	2.01	Urban Minor Arterial	4 Lane Divided Highway	12	0	Raised Non-mountable	16	N/A	45		31,900	G57	2007	2.7%	31,900	8.7%		77,600	14.2%			
	2	Fayette	8.566 (Tates Creek Road)	10.285 (Armstrong Mill Road)	1.72										25,600	G78	2005	2.0%	26,600			51,300				
	3	Fayette	10.285 (Armstrong Mill Road)	11.821 (Alumni Drive)	1.54										35,200	F14	2005	3.0%	37,300			98,900				
	4	Fayette	11.821 (Alumni Drive)	12.792 (US 25 / Richmond Road)	0.97										44,800	F99	2007	3.4%	44,800			135,900				
	5	Fayette	12.792 (US 25 / Richmond Road)	13.454 (Palumbo Drive)	0.66										32,800	D18	2005	2.3%	34,300			73,300				
	6	Fayette	13.454 (Palumbo Drive)	14.254 (KY 1927 / Todds Road)	0.80										41,600	G73	2007	1.3%	41,600			63,900				
	7	Fayette	14.254 (KY 1927 / Todds Road)	15.241 (I-75 / KY 1425)	0.99										39,100	D79	2007	1.1%	39,100			56,100				

\*Truck Percentages in italics were found based on 2004 Traffic Forecasting Report

**Legend**

**FUNCTIONAL CLASSIFICATION**

- Rural Interstate
- Rural Principal Arterial
- Rural Minor Arterial
- Rural Major Collector
- Rural Minor Collector
- Rural Local
- Urban Interstate
- Urban Freeway - Expressway
- Urban Principal Arterial
- Urban Minor Arterial
- Urban Collector Street
- Urban Local
- County Boundary
- Corporate Boundary

0 2.5 5 10 Miles

**Source:** KY Transportation Cabinet, KY Office of Geographic Information, KY Infrastructure Authority

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Source: KY Transportation Cabinet, KY Office of Geographic Information, KY Infrastructure Authority



### 3.2 Current and Historical Traffic Volumes

The average daily traffic volumes used for this project included traffic counts from the KYTC CTS database. These counts were conducted during the years of 2004 – 2007.

The counts from 2004 to 2006 were forecasted to a base year of 2007. Growth rates for the study were based upon a historical traffic growth analysis along all study area routes. The analysis utilized traffic counts obtained from the KYTC's 'CTS' traffic count program which includes counts from 1963 to 2007.

The historical counts were entered into a spreadsheet provided by KYTC Division of Planning. The spreadsheet calculates growth rates using both exponential and trend line analyses. The historical growth rates are shown in **Table 1**.

In selecting an appropriate traffic growth rate, several factors were considered including the historical growth, recent traffic volumes, and geography. The growth rates reflect historical trends along each segment, but do not include specific developments that may be constructed within or adjacent to the project area.

Current (2007) average daily traffic volumes are shown in **Figure 3**.

Truck percentages were determined from the vehicle classification database where available. If truck percentages were not available for a specific roadway section, then a truck percentage was assumed based on the 2004 Traffic Forecasting Report developed by the Kentucky Transportation Cabinet. These truck percentages are shown in **Table 1**.

**Legend**

- 2007 Average Daily Traffic
- Interstate
- US HWY
- State Route
- County Boundary
- Corporate Boundary

The 2007 Average Daily Traffic (ADT) is based on the most recent actual counts provided by the KYTC; where possible, 2007 actual counts were used. ADTs not collected in 2007 were factored using historical growth rates for the count station.

0 2.5 5 10 Miles

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Source: KY Transportation Cabinet, KY Office of Geographic Information, KY Infrastructure Authority

**Detail Map**

Nicholasville

38700

27700

4500

25000

3800

20200

7600

21800

3400

16400

11400

10300

24600

1300

3100

1500

65400

3100

2800

3055

388

3377

977

374

374

938

499

421

21

1617

595

2881

1983

75

52

25

13800

5700

6300

1800

4500

53700

2500

12800

1300

700

876

595

1984

700

1985

400

1000

1400

800

600

169

1156

200

1976

1975

600

1200

900

2200

198

3600

1541

100

100

900

19200

1268

29

1267

3375

37100

1966

4

60

1978

1681

1969

421

1977

64

75

922

1962

1876

68

27

1425

60

859

1973

53100

41600

39100

34300

44800

31900

37300

26600

55300

3300

2500

6500

10300

3100

4400

418

41600

30600

3100

65400

3100

2800

3055

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1156

200

1976

1975

600

1200

900

2200

198

3600

1541

100

100

900

19200

1268

29

1267

3375

37100

1966

4

60

1978

1681

1969

421

1977

64

75

922

1962

1876

68

27

1425

60

859

1973

53100

41600

39100

34300

44800

31900

37300

26600

55300

3300

2500

6500

10300

3100

4400

418

41600

30600

3100

65400

3100

2800

3055

388

3377

977

374

374

938

499

421

21

1617

595

2881

1983

75

52

25

13800

5700

6300

1800

4500

53700

2500

12800

1300

700

876

595

1984

700

1985

400

1000

1400

800

600

169

1156

200

1976

1975

600

1200

900

2200

198

3600

1541

100

100

900

19200

1268

29

1267

3375

37100

1966

4

60

1978

1681

1969

421

1977

64

75

922

1962

1876

68

27

1425

60

859

1973

53100

41600

39100

34300

44800

31900

37300

26600

55300

3300

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6500

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595

1984

700

1985

400

1000

1400

800

600

169

1156

200

1976

1975

600

1200

900

2200

198

3600

1541

100

100

900

19200

1268

29

1267

3375

37100

1966

4

60

1978

1681

1969

421

1977

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75

922

1962

1876

68

2

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Source: KY Transportation Cabinet, KY Office of Geographic Information, KY Infrastructure Authority

### 3.3 Travel Time Study

Travel time runs were performed to obtain a baseline comparison for the travel time savings of a new corridor, as well as to compare and calibrate the Kentucky Statewide Traffic Model (KYSTM) for use in determining new connector volumes. Two routes between US 27 and I-75 were chosen to do travel time runs. The first route began on KY 39 at US 27 and ended at US 25 where it crosses over I-75. This route did not involve a river crossing, and took 27 minutes to complete. The second route began on KY 169 where it crosses I-75, and ended on KY 169 at US 27. This path crossed the Kentucky River using the Valley View Ferry and took 35 and one-half minutes. Each run was completed according to guidelines set forth in the Institute of Transportation Engineers Traffic Engineering Handbook. **Table 2** shows travel times for individual segments along each route.

**Table 2: Travel Time Results**

Route	Distance	Time	Avg. Speed
KY 39 @ US 27 to KY 1541	1.84	3:57	28.0
KY 1541 @ KY 39 to KY 1981	2.67	4:24	36.4
KY 1981 @ KY 1541 to Old Railroad Road	1.83	2:54	37.9
KY 1981 @ Old Railroad Road to KY 169	1.74	2:29	42.1
KY 169 @ KY 1981 to KY 1975	2.2	2:52	45.9
KY 1975 @ KY 169 to Jack's Creek Pike	1.65	2:27	40.4
KY 1975 @ Jack's Creek Pike to Crawley Lane	1.26	2:05	36.3
KY 1975 @ Crawley Lane to US 25	2.45	3:22	43.7
US 25 @ KY 1975 to I-75	2.11	2:30	50.6
<b>Total</b>	<b>17.75</b>	<b>27:00</b>	<b>40.5</b>
KY 169 @ I-75 to Crutcher Pike	3.33	3:54	51.2
KY 169 @ Crutcher Pike to KY 1985	3.02	3:59	45.5
KY 169 @ KY 1985 to KY 1156	3.74	5:07	43.9
KY 169 @ KY 1156 to Valley View Ferry	0.71	7:16	5.9
KY 169 @ Valley View Ferry to KY 1974	1.97	3:39	32.4
KY 169 @ KY 1974 to E. Hickman Road	2.99	4:11	42.9
KY 169 @ E. Hickman Road to Bethany Road	2.58	3:24	45.5
KY 169 @ Bethany Road to US 27	2.68	4:07	39.1
<b>Total</b>	<b>21.02</b>	<b>35:37</b>	<b>42.4</b>

### 3.4 Current Level of Service (LOS) Analysis

#### 3.4.1 Methodology

##### Two-Lane Highway Analysis

For the two-lane highways (KY 39, KY 169, KY 595, KY 876, KY 1156, KY 1541, KY 1974, KY 1975, KY 1980, KY 1981, KY 1984, KY 1985, KY 3055, and portions of US 25, and US 27), a corridor level of service analysis was prepared using the Highway Capacity Software Plus (HCS+) two-lane road analysis module. This is based on the 2000 Highway Capacity Manual (HCM). For this method, there are two classes of

roadways: Class I highways which include higher speed arterials and daily commuter routes, and Class II highways which include lower speed collector roadways and roads primarily designed to provide access. Driver expectations regarding speed and flow are important in determining a highway's class. All state routes were assumed to be major through routes in the study area, and were therefore considered to be Class I highways. Levels of service for Class I highways are based on the estimated average travel speeds and percent time vehicles spend following other vehicles as shown in **Table 3**. Levels of service for Class II highways are defined only in terms of the percent time vehicles spend following other vehicles. Average travel speed is not considered since drivers typically will tolerate lower speeds on a Class II facility because of its function as an access roadway (serving shorter trips and fewer through trips). Refer to the HCM for more details.

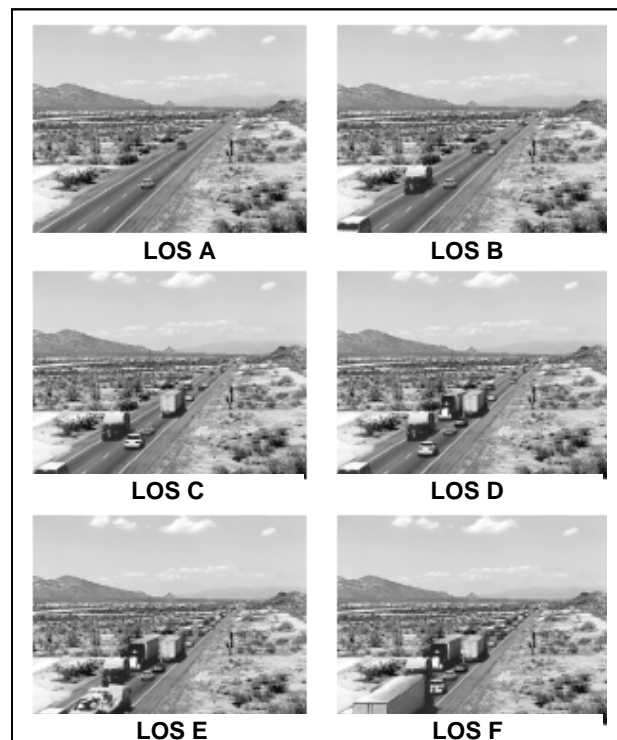
**Table 3: LOS Criteria for Two-Lane Highways**

LOS	Class I Highways		Class II Highways
	Percent Time Spent Following	Average Travel Speed	Percent Time Spent Following
A	$\leq 35$	$>55$	$\leq 40$
B	$>35 - 50$	$>50 - 55$	$>40 - 55$
C	$>50 - 65$	$>45 - 50$	$>55 - 70$
D	$>65 - 80$	$>40 - 45$	$>70 - 85$
E	$>80$	$\leq 40$	$>85$
F	LOS F applies whenever the flow rate exceeds the capacity		

Source: Highway Capacity Manual (2000)

**Figure 4: Levels of Service**

Level of service A represents a free flowing facility with little time spent following another vehicle and plenty of opportunities for passing. Percent time following increases and opportunities to pass and travel speeds decrease with Level of service down to LOS F which represents a congested roadway that is over capacity with no opportunities to pass and low travel speeds. LOS D is the threshold for desirable traffic operations in this study, based on guidance from the AASHTO Policy on Geometric Design of Highways and Streets. While there are various roadway types in the study area, including urban and suburban freeways and arterials, as well as rural freeways, (which have a desired LOS of B or C), the majority of roadways fall under the categories of urban and suburban collector and local roads, as well as rural rolling local roads, which have a desired LOS D. It was determined that all roadways should be



evaluated using the same criteria and that operations below this threshold be noted as undesirable and warrant improvement. For Class I highways, the LOS D threshold corresponds to an average travel speed of >40 miles per hour with  $\leq 80$  percent time spent following another vehicle. Refer to **Figure 4** for a graphical representation of what a LOS D looks like.

#### Multilane Highway Analysis

To analyze traffic operations for the four-lane or greater highway sections (US 25, US 27 and Man O' War Boulevard), the HCS+ multilane analysis package was used. This is also based on the 2000 HCM methodology. For each section, the estimated travel speed and the resulting levels of service (LOS) were calculated.

Levels of service for multilane highway sections are based on density in terms of passenger cars per mile per lane (pc/mi/ln) as shown in **Table 4**. Density is used to define level of service because it is an indicator of freedom to maneuver within the traffic stream and the proximity to other vehicles. Speed in terms of mean passenger-car speed and volume-to-capacity (v/c) ratios are interrelated with density and can be used to characterize a multilane highway segment.

**Table 4: LOS Criteria for Multilane Highways**

LOS	Density Range (pc/mi/ln)
A	0 – 11
B	> 11 – 18
C	> 18 – 26
D	> 26 – 35
E	> 35 – 45
F	> 45

Source: Highway Capacity Manual (2000)

Similar to the two-lane highway analysis, LOS D is the threshold for desirable traffic operations used in this study. For multilane highways, a LOS D corresponds to a density between 26 and 35 passenger cars per mile per lane. (Refer to the HCM for more specific information.)

#### Freeway Analysis

To analyze peak hour traffic operations for I-75, the HCS+ freeway analysis package was used, also based on the 2000 HCM. For each section, the estimated travel speed and the resulting levels of service (LOS) were calculated.

Levels of service for freeway sections are based on density in terms of passenger cars per mile per lane (pc/mi/ln) as shown in **Table 5**. Similar to multilane highways, density is used to define level of service because it is an indicator of freedom to maneuver within the traffic stream and the proximity to other vehicles. Speed in terms of mean passenger-car speed and volume-to-capacity (v/c) ratios are interrelated with density and can be used to characterize a freeway segment.

**Table 5: LOS Criteria for Freeways**

LOS	Density Range (pc/mi/ln)
A	0 – 11
B	> 11 – 18
C	> 18 – 26
D	> 26 – 35
E	> 35 – 45
F	> 45

Source: Highway Capacity Manual (2000)

Again, LOS D is the threshold for desirable traffic operations used in this study. For freeways, a LOS D corresponds to a density between 26 and 35 passenger cars per mile per lane. (Refer to the HCM for more specific information.)

### **3.4.2 Existing Traffic Operating Conditions**

The most recent 24-hour KYTC traffic counts were used to evaluate corridor operating conditions. Peak hour traffic volumes for highway segments were estimated based on the average daily traffic volumes for those segments using K-factors (factor based on the 30<sup>th</sup> highest hour of the year) derived from the KYTC counts. The current lane widths, shoulder widths, percent passing, and other design factors were also used.

The segment levels of service are listed in **Table 6** and are shown on **Figure 5**.

Table 6: 2007 Corridor Levels of Service

Route	Section	Begin Milepoint	End Milepoint	Section Length (miles)	2007 ADT	K-Factor	2007 DHV	Off Peak Direction %	Peak Direction %	Posted Speed Limit (MPH)	% Trucks	Estimated Travel Speed	% Time Spent Following	Density (pc/mi/ln)	LOS
US 27X	1	0.0 (South of Nicholasville)	0.23 (Southbrook Drive)	0.23	10,300	0.112	1150	43	57	55	10.3	40.5	77.4	N/A	D
	2	0.23 (Southbrook Drive)	0.835 (John C Watts Drive)	0.61	10,300	0.1	1030	44	56	55	10.3	74.9	74.9	N/A	D
	3	0.835 (John C Watts Drive)	1.075 (Longview Drive)	0.24	11,400	0.1	1140	44	56	45	10.3	77.2	77.2	N/A	D
	4	1.075 (Longview Drive)	1.305 (Edgewood Drive)	0.23	16,400	0.1	1640	44	56	35	10.3				
	5	1.305 (Edgewood Drive)	1.586 (Natchez Trace)	0.28	21,800	0.1	2180	44	56	35	10.3				
	6	1.586 (Natchez Trace)	1.88 (Brown Street)	0.29	21,800	0.1	2180	44	56	35	10.3				
	7	1.88 (Brown Street)	2.112 (Chestnut Street)	0.23	20,200	0.1	2020	44	56	35	10.3				
	8	2.112 (Chestnut Street)	2.18 (KY 39/KY 29)	0.07	20,200	0.1	2020	44	56	25	10.3				
	9	2.18 (KY 39/KY 29)	2.38 (KY 169)	0.20	25,000	0.1	2500	44	56	25	10.3				
	10	2.38 (KY 169)	2.882 (Duncan Street)	0.50	26,700	0.1	2670	44	56	35	10.3				
	11	2.882 (Duncan Street)	3.89 (US 27 Bypass)	1.01	27,700	0.1	2770	44	56	35	10.3				
US 27 (South and North of Downtown)	1	0.0 (Garrard-Jessamine County Line)	1.115 (South of Old Danville Road)	1.12	19,200	0.101	1940	44	56	55	8.9	51	N/A	13.4	B
	2	1.115 (South of Old Danville Road)	3.826 (Greystone Drive/KY 1268)	2.71	19,200	0.101	1940	44	56	55	8.9	51	N/A	13.4	B
	3	3.826 (Greystone Drive/KY 1268)	6.011 (US 27 Bypass)	2.19	22,600	0.101	2280	44	56	55	8.9	51	N/A	15.8	B
	4	10.827 (US 27 Bypass)	11.016 (South of Old US 27 ROW)	0.19	38,700	0.101	3910	44	56	55	8.9	51	N/A	27.1	D
	5	11.016 (South of Old US 27 ROW)	13.695 (Industry Parkway)	2.68	38,700	0.101	3910	44	56	55	8.9	49.4	N/A	27.9	D
	6	13.695 (Industry Parkway)	14.807 (KY 1980)	1.11	38,700	0.106	4100	40	60	55	8.9	51.3	N/A	28	D
	7	14.807 (KY 1980)	15.278 (Jessamine-Fayette County Line)	0.47	37,100	0.106	3930	40	60	55	8.9	51.4	N/A	26.8	D
	8	0.0 (Fayette-Jessamine Co. Line)	0.956 (Man O War)	0.96	55,300	0.101	5590	44	56	55	6.9	50.1	N/A	N/A	F
I-75	1	87.185 (KY 876)	89.802 (US 25)	2.62	53,700	0.1	5370	44	56	65	16	62	N/A	22.3	C
	2	89.802 (US 25)	91.1 (North of US 25)	1.30	65,900	0.104	6850	43	57	65	16	63.4	N/A	29.2	D
	3	91.1 (North of US 25)	92.1 (North of Lexington Access Road)	1.00	65,900	0.104	6850	43	57	65	16	63.4	N/A	29.2	D
	4	92.1 (North of Lexington Access Road)	94.295 (South of KY 627)	2.20	65,900	0.104	6850	43	57	65	16	63.4	N/A	29.2	D
	5	94.295 (South of KY 627)	94.73 (KY 627)	0.44	65,900	0.104	6850	43	57	65	16	63.4	N/A	29.2	D
	6	94.73 (KY 627)	97.038 (US 25)	2.31	62,200	0.104	6470	43	57	65	19.1	63.8	N/A	28.4	D
	7	97.038 (US 25)	97.703 (Madison-Fayette County Line)	0.67	65,700	0.104	6830	43	57	65	19.1	62.8	N/A	30.4	D
	8	97.703 (Madison-Fayette County Line)	98.516 (US 25)	0.81	65,700	0.104	6830	43	57	65	19.1	62.8	N/A	30.4	D
	9	98.516 (US 25)	103.89 (KY 418)	5.37	65,400	0.104	6800	43	57	65	19.1	62.9	N/A	30.3	D
	10	103.89 (KY 418)	108.21 (KY 1425 Man-O-War Underpass)	4.32	53,100	0.104	5520	43	57	65	19.1	65	N/A	23.8	C
KY 1541	1	0 (KY 39)	3.556 (Kissing Ridge Road)	3.56	100	0.11	10	43	57	55	10.3	47.7	24.7	N/A	C
	2	3.556 (Kissing Ridge Road)	4.500 (North of Pollard Pike)	0.94	500	0.11	60	43	57	55	10.3	45.4	31.3	N/A	C
	3	4.500 (North of Pollard Pike)	7.000 (North of KY 1981)	2.50	1,300	0.11	140	43	57	55	10.3	42.4	40.9	N/A	D
	4	7.000 (North of KY 1981)	9.668 (KY 39)	2.67	1,300	0.11	140	43	57	55	10.3	42.4	40.9	N/A	D

LOS E - F

LOS D

LOS A - C

Speed <45, Not Analyzed

Notes:

ADT = 2007 Average Daily Traffic (count or estimate) from CTS Traffic Count Information

K-Factor = Design Hour Factor obtained from KYTC 2004 Traffic Forecasting Report

DHV = 2007 Design Hour Volume (Average Daily Traffic x K-Factor)

Speed Limit obtained from Highway Information System

% Trucks and Buses obtained from 2004 Vehicle Classification System Database. Roadways where data did not exist were estimated using KYTC 2004 Traffic Forecasting Report, and are italicized.

Level of Service (LOS) and % Time Spent Following calculated using Highway Capacity Software Plus.

% RVs were obtained from exhibit 12-14 of the HCM.

Number of access points per mile were obtained from exhibit 12-4 of the HCM.

\*45 mph was used as the posted speed since that is the lowest value HCS + accepts for two-lane highway analysis.

\*\* Lane widths less than 9 ft were entered in as 9 ft since that is the HCS+ minimum.

Sources: Highway Information System Database, KYTC 2004 Traffic Forecasting Report, KYTC Vehicle Classification Database

Table 6: 2007 Corridor Levels of Service (cont.)

Route	Section	Begin Milepoint	End Milepoint	Section Length (miles)	2007 ADT	K-Factor	2007 DHV	Off Peak Direction %	Peak Direction %	Posted Speed Limit (MPH)	% Trucks	Estimated Travel Speed (MPH)	% Time Spent Following	Density (pc/mi/ln)	LOS
US 25	1	20.255 (I-75 Bridge)	20.342 (North of I-75 Bridge)	0.09	13,800	0.101	1390	44	56	45	6.9	45	N/A	10.6	A
	2	20.342 (North of I-75 Bridge)	20.49 (Keeneland Drive)	0.09	13,800	0.101	1390	44	56	45	6.9	45	N/A	10.6	A
	3	20.49 (Keeneland Drive)	20.573 (Brandy Lane)	0.08	13,800	0.101	1390	44	56	45	6.9	45	N/A	10.6	A
	4	20.573 (Brandy Lane)	20.771 (Keystone Drive)	0.20	13,800	0.101	1390	44	56	45	6.9	24.1	82	N/A	D
	5	20.771 (Keystone Drive)	20.964 (KY 1156)	0.19	13,800	0.101	1390	44	56	45	6.9	22	82	N/A	D
	6	20.964 (KY 1156)	21.139 (North of KY 1156)	0.18	6,100	0.101	620	44	56	45	6.9	27.1	64.9	N/A	C
	7	21.139 (North of KY 1156)	24.076 (Clay Lane)	2.94	6,100	0.115	700	36	64	55	12.4	38.7	67.2	N/A	E
	8	24.076 (Clay Lane)	25.373 (KY 627/KY 3055)	1.30	3,600	0.115	410	36	64	55	12.4	41.5	52.8	N/A	D
	9	25.373 (KY 627/KY 3055)	28.161 (KY 2884)	2.79	2,800	0.115	320	36	64	55	12.4	41.3	56.9	N/A	D
	10	0 (South Limits of I-75 Interchange)	.366 (North of I-75 NB Ramps)	0.37	3,100	0.112	350	43	57	55	10.3	45.6	59	N/A	C
	11	.366 (North of I-75 NB Ramps)	1.829 (South of Elk Lick Falls Road)	1.46	3,100	0.112	350	43	57	55	10.3	40.9	59	N/A	D
	12	1.829 (South of Elk Lick Falls Road)	2.876 (North of Turner Station Road)	1.05	3,100	0.112	350	43	57	55	10.3	45.6	59	N/A	C
	13	2.876 (North of Turner Station Road)	4.832 (KY 1975)	1.96	3,100	0.112	350	43	57	55	10.3	45.2	59	N/A	C
	14	4.832 (KY 1975)	8.144 (KY 418)	3.31	4,400	0.112	490	43	57	55	10.3	44.7	60.4	N/A	D
KY 1980	1	8.144 (KY 418)	9.734 (Man O War Boulevard)	1.59	30,600	0.101	3090	44	56	55	6.9	53	N/A	20.8	C
	2	3.025 (US 27)	3.68 (West of Leeburton Road)	0.66	3,300	0.115	380	36	64	55	10.2	40.1	56.4	N/A	D
	3	3.68 (West of Leeburton Road)	4.06 (East of Noland Drive)	0.38	3,300	0.115	380	36	64	45	10.2	30.1	56.4	N/A	E
	4	4.06 (East of Noland Drive)	4.69 (Ashgrove Lane)	0.63	3,300	0.115	380	36	64	55	10.2	40.1	56.4	N/A	D
	5	4.69 (Ashgrove Lane)	5.06 (East of Young Drive)	0.37	2,500	0.115	290	36	64	35	10.2				
	6	5.06 (East of Young Drive)	6.02 (West of Spurlock Lane)	0.96	2,500	0.115	290	36	64	55	10.2	39.9	55.4	N/A	E
	7	6.02 (West of Spurlock Lane)	6.69 (East of Mackey Pike)	0.67	2,500	0.115	290	36	64	45	10.2	29.9	55.4	N/A	E
KY 1974	1	6.69 (East of Mackey Pike)	7.451 (Fayette County Line)	0.76	2,500	0.115	290	36	64	55	10.2	39.9	55.4	N/A	E
	2	0.00 (KY 169)	.16 (South of KY 1975)	0.16	900	0.112	100	43	57	35	14				
	3	.16 (South of KY 1975)	1.667 (Crawley Lane)	1.51	900	0.112	100	43	57	55	14	41.7	36.6	N/A	D
	4	1.667 (Crawley Lane)	4.228 (Delong Road)	3.04	1,500	0.112	170	43	57	55	14	39.9	44.8	N/A	E
	5	4.228 (Delong Road)	4.711 (South of Hickman Creek Bridge)	0.48	6,500	0.1	650	44	56	55	8.7	35.1	66	N/A	E
	6	4.711 (South of Hickman Creek Bridge)	5.443 (KY 1980)	0.73	6,500	0.1	650	44	56	55	8.7	35.1	66	N/A	E
KY 1981	1	5.443 (KY 1980)	7.782 (Man O War Boulevard)	2.34	10,000	0.1	1000	44	56	55	8.7	45	N/A	8.1	A
	2	0.00 (KY 1541)	2.365 (Marble Creek Lane)	2.37	600	0.11	70	43	57	55	10.3	44.9	32.6	N/A	D
	3	2.365 (Marble Creek Lane)	3.30 (South of KY 169)	0.94	600	0.11	70	43	57	55	10.3	44.9	32.6	N/A	D
	4	3.30 (South of KY 169)	3.668 (KY 169)	0.37	600	0.11	70	43	57	35	10.3				
	5	3.668 (KY 169)	3.998 (North of Caveson Way)	0.30	2,200	0.11	240	43	57	55	8.6	40.4	51.4	N/A	D
		3.998 (North of Caveson Way)	6.13 (KY 1974 @ Fayette County Line)	2.13	2,200	0.11	240	43	57	55	8.6	40.4	51.4	N/A	D

LOS E - F

LOS D

LOS A - C

Speed <45, Not Analyzed

Notes:  
ADT = 2007 Average Daily Traffic (count or estimate) from CTS Traffic Count Information  
K-Factor = Design Hour Factor obtained from KYTC 2004 Traffic Forecasting Report  
DHV = 2007 Design Hour Volume (Average Daily Traffic x K-Factor)  
Speed Limit obtained from Highway Information System  
% Trucks and Buses obtained from 2004 Vehicle Classification System Database. Roadways where data did not exist were estimated using KYTC 2004 Traffic Forecasting Report, and are italicized.  
Level of Service (LOS) and % Time Spent Following calculated using Highway Capacity Software Plus.  
% RVs were obtained from exhibit 12-14 of the HCM.  
Number of access points per mile were obtained from exhibit 12-4 of the HCM.

\*45 mph was used as the posted speed since that is the lowest value HCS + accepts for two-lane highway analysis.  
\*\* Lane widths less than 9 ft were entered in as 9 ft since that is the HCS+ minimum.

Sources: Highway Information System Database, KYTC 2004 Traffic Forecasting Report, KYTC Vehicle Classification Database

Table 6: 2007 Corridor Levels of Service (cont.)

Route	Section	Begin Milepoint	End Milepoint	Section Length (miles)	2007 ADT	K-Factor	2007 DHV	Off Peak Direction %	Peak Direction %	Posted Speed Limit (MPH)	% Trucks	Estimated Travel Speed (MPH)	% Time Spent Following	Density (pc/mi/ln)	LOS
KY 169	1	1.349 (I-75 Underpass)	2.240 (Goggins Lane)	0.89	5,700	0.12	680	42	58	55	7.8	38.2	65.5	N/A	E
	2	2.240 (Goggins Lane)	3.082 (Boone Way)	0.84	4,300	0.12	520	42	58	55	7.8	39.3	61.1	N/A	E
	3	3.082 (Boone Way)	4.877 (Crutcher Pike)	1.80	4,300	0.115	490	36	64	55	7.8	41.4	60.3	N/A	D
	4	4.877 (Crutcher Pike)	6.184 (KY 1984)	1.31	1,400	0.115	160	36	64	55	7.8	43.1	43.8	N/A	D
	5	6.184 (KY 1984)	8.051 (KY 1985)	1.87	1,000	0.115	120	36	64	55	7.8	44	39.8	N/A	D
	6	8.051 (KY 1985)	8.478 (Buffalo Road)	0.43	600	0.115	70	36	64	55	7.8	45	34.5	N/A	C
	7	8.478 (Buffalo Road)	11.74 (Ervin Sloan East Road)	3.26	600	0.115	70	36	64	55	7.8	43.4	34.5	N/A	D
	8	11.74 (Ervin Sloan East Road)	11.869 (KY 1156 / Carvers Ferry Road)	0.13	600	0.115	70	36	64	55	7.8	43.4	34.5	N/A	D
	9	11.869 (KY 1156 / Carvers Ferry Road)	12.511 (Approach to Valley View Ferry)	0.64	400	0.115	50	36	64	55	7.8	44.3	32.2	N/A	D
	10	0.00 (Approach to Valley View Ferry)	1.939 (South of Newman Road)	1.94	600	0.115	70	36	64	55	5.2	46.5	34	N/A	C
	11	1.939 (South of Newman Road)	2.030 (North of KY 1974)	0.09	600	0.115	70	36	64	55	5.2	46.2	34.2	N/A	C
	12	2.030 (North of KY 1974)	3.598 (South of Burnside Drive)	1.57	1,200	0.115	140	36	64	55	5.2	44.1	41.3	N/A	D
	13	3.598 (South of Burnside Drive)	4.218 (KY 1981)	0.62	1,200	0.115	140	36	64	35	5.2				
	14	4.218 (KY 1981)	7.733 (Vince Road / Bethany Road)	3.52	3,600	0.115	410	36	64	55	5.2	41.6	56.8	N/A	D
	15	7.733 (Vince Road / Bethany Road)	9.482 (Locust Heights)	1.75	4,500	0.115	520	36	64	55	5.2	40.7	62.2	N/A	D
	16	9.482 (Locust Heights)	9.918 (North of Glencove Ave)	0.44	4,500	0.1	450	44	56	45	5.2	29.6	59.9	N/A	E
	17	9.918 (North of Glencove Ave)	10.028 (Liberty Street)	0.11	4,500	0.1	450	44	56	35	5.2				
	18	10.028 (Liberty Street)	10.362 (Bell Court)	0.33	3,800	0.1	380	44	56	35	5.2				
	19	10.362 (Bell Court)	10.458 (US 27)	0.10	3,800	0.1	380	44	56	25	5.2				
KY 876	1	0.00 (KY 595)	2.387 (Bogle Mill Road)	2.39	700	0.11	80	43	57	55	10.3	44.5	33.8	N/A	D
	2	2.387 (Bogle Mill Road)	3.99 (West of Redwood Drive)	1.60	1,300	0.11	140	43	57	55	10.3	40.8	40.9	N/A	D
	3	3.99 (West of Redwood Drive)	4.77 (Old Pond Way/Mule Shed Road)	0.78	1,300	0.11	140	43	57	45	10.3	32.4	40.9	N/A	E
	4	4.77 (Old Pond Way/Mule Shed Road)	5.15 (West of Curtis Pike)	0.38	2,500	0.11	280	43	57	45	10.3	28.4	54.9	N/A	E
	5	5.15 (West of Curtis Pike)	6.528 (Willis Branch Road)	1.38	2,500	0.11	280	43	57	45	10.3	29.5	54.9	N/A	E
	6	6.528 (Willis Branch Road)	6.95 (West of Amberly Way)	0.42	12,800	0.11	1410	43	57	45	10.3	23.1	82.3	N/A	E
	7	6.95 (West of Amberly Way)	7.097 (I-75 Ramp)	0.15	12,800	0.11	1410	43	57	45	10.3	27.3	82.3	N/A	E
KY 1156	1	0.00 (US 25)	.64 (South of Secretariat Drive)	0.64	1,800	0.12	220	42	58	35	5.1				
	2	.64 (South of Secretariat Drive)	1.352 (Boone Way)	0.71	1,800	0.12	220	42	58	55	5.1	37.3	48.6	N/A	E
	3	1.352 (Boone Way)	4.5 (South of Clay Lane)	3.15	800	0.11	90	43	57	55	5.1	42.7	34.6	N/A	D
	4	4.5 (South of Clay Lane)	5.68 (South of Kentucky River Road)	1.18	800	0.11	90	43	57	55	5.1	42.7	34.6	N/A	D
	5	5.68 (South of Kentucky River Road)	6.278 (Kentucky River Road)	0.60	800	0.11	90	43	57	55	5.1	42.7	34.6	N/A	D
	6	6.278 (Kentucky River Road)	8.7 (South of Tate Creek Bridge)	2.42	200	0.11	20	43	57	55	5.1	45.7	25.9	N/A	C
	7	8.7 (South of Tate Creek Bridge)	9.376 (KY 169)	0.68	200	0.11	20	43	57	55	5.1	45.7	25.9	N/A	C

LOS E - F

LOS D

LOS A - C

Speed <45, Not Analyzed

Notes:

ADT = 2007 Average Daily Traffic (count or estimate) from CTS Traffic Count Information

K-Factor = Design Hour Factor obtained from KYTC 2004 Traffic Forecasting Report

DHV = 2007 Design Hour Volume (Average Daily Traffic x K-Factor)

Speed Limit obtained from Highway Information System

% Trucks and Buses obtained from 2004 Vehicle Classification System Database. Roadways where data did not exist were estimated using KYTC 2004 Traffic Forecasting Report, and are italicized.

Level of Service (LOS) and % Time Spent Following calculated using Highway Capacity Software Plus.

% RVs were obtained from exhibit 12-14 of the HCM.

Number of access points per mile were obtained from exhibit 12-4 of the HCM.

\*45 mph was used as the posted speed since that is the lowest value HCS + accepts for two-lane highway analysis.

\*\* Lane widths less than 9 ft were entered in as 9 ft since that is the HCS+ minimum.

Sources: Highway Information System Database, KYTC 2004 Traffic Forecasting Report, KYTC Vehicle Classification Database

Table 6: 2007 Corridor Levels of Service (cont.)

Route	Section	Begin Milepoint	End Milepoint	Section Length (miles)	2007 ADT	K-Factor	2007 DHV	Off Peak Direction %	Peak Direction %	Posted Speed Limit (MPH)	% Trucks	Estimated Travel Speed (MPH)	% Time Spent Following	Density (pc/mi/ln)	LOS
KY 39	1	0.00 (North Bank of Kentucky River)	0.12 (KY 1541)	0.12	100	0.11	10	43	57	55	7.4	47.7	24.7	N/A	C
	2	0.12 (KY 1541)	2.454 (KY 1268)	2.33	100	0.11	10	43	57	55	7.4	47.7	24.7	N/A	C
	3	2.454 (KY 1268)	3.747 (Big Hickman Creek Bridge)	1.29	900	0.11	100	43	57	55	7.4	43.7	36	N/A	D
	4	3.747 (Big Hickman Creek Bridge)	5.56 (North of Old Sulphur Well Road)	1.81	900	0.11	100	43	57	55	7.4	44.8	36	N/A	D
	5	5.56 (North of Old Sulphur Well Road)	5.83 (North of Elmfork Road)	0.27	900	0.11	100	43	57	45	7.4	34.8	36	N/A	E
	6	5.83 (North of Elmfork Road)	7.550 (KY 1541)	1.72	900	0.11	100	43	57	55	7.4	44.8	36	N/A	D
	7	7.550 (KY 1541)	8.38 (South of Ash Drive)	0.83	3,400	0.11	370	43	57	55	7.4	41.3	60.7	N/A	D
	8	8.38 (South of Ash Drive)	8.548 (Ash Drive)	0.17	3,400	0.11	370	43	57	35	7.4				
	9	8.548 (Ash Drive)	8.875 (Miles Road)	0.33	3,400	0.1	340	44	56	35	7.4				
	10	8.875 (Miles Road)	9.29 (Hager Lane)	0.42	7,600	0.1	760	44	56	35	7.4				
	11	9.29 (Hager Lane)	9.404 (KY 29 / US 27)	0.11	7,600	0.1	760	44	56	25	7.4				
CS 4524 (Man O' War Blvd)	1	6.561 (Nicholasville Road)	8.566 (Tates Creek Road)	2.01	31,900	0.1	3190	44	56	45	8.7	45	N/A	23.2	C
	2	8.566 (Tates Creek Road)	10.285 (Armstrong Mill Road)	1.72	26,600	0.1	2660	44	56	45	8.7	45	N/A	19.4	C
	3	10.285 (Armstrong Mill Road)	11.821 (Alumni Drive)	1.54	37,300	0.1	3730	44	56	45	8.7	45	N/A	27.2	D
	4	11.821 (Alumni Drive)	12.792 (US 25 / Richmond Road)	0.97	44,800	0.1	4480	44	56	45	8.7	45	N/A	32.7	D
	5	12.792 (US 25 / Richmond Road)	13.454 (Palumbo Drive)	0.66	34,300	0.1	3430	44	56	45	8.7	45	N/A	25	C
	6	13.454 (Palumbo Drive)	14.254 (KY 1927 / Todds Road)	0.80	41,600	0.1	4160	44	56	45	8.7	45	N/A	30.3	D
	7	14.254 (KY 1927 / Todds Road)	15.241 (I-75 / KY 1425)	0.99	39,100	0.1	3910	44	56	45	8.7	45	N/A	25.6	C
KY 595	1	16.014 (KY 876)	17.03 (Dry Branch Road)	1.02	600	0.11	70	43	57	55	8.6	43.4	32.5	N/A	D
	2	17.03 (Dry Branch Road)	20.78 (North of Sledd Branch Road)	3.75	700	0.11	80	43	57	55	8.6	42.9	33.7	N/A	D
	3	20.78 (North of Sledd Branch Road)	22.212 (New Road)	1.43	700	0.11	80	43	57	55	8.6	45.1	33.7	N/A	C
	4	22.212 (New Road)	24.55 (South of Poosey Ridge Road)	2.34	100	0.11	10	43	57	55	8.6	48.3	24.7	N/A	C
	5	24.55 (South of Poosey Ridge Road)	24.604 (Poosey Ridge Road)	0.05	100	0.11	10	43	57	55	8.6	47.2	24.7	N/A	C
KY 1984	1	0.00 (Newby Road)	.751 (West of Kanatzar Lane)	0.75	700	0.11	80	43	57	55	8.6	42.9	33.7	N/A	D
	2	.751 (West of Kanatzar Lane)	1.051 (West of Haden Heights)	0.30	700	0.11	80	43	57	55	8.6	44.5	33.7	N/A	D
	3	1.051 (West of Haden Heights)	2.06 (KY 169)	1.01	700	0.11	80	43	57	55	8.6	42.9	33.7	N/A	D
KY 1985	1	0.00 (Whitlock Road / Baldwin Road)	.85 (East of Whitlock and Baldwin)	0.85	400	0.11	40	43	57	55	8.6	44.8	28.6	N/A	D
	2	.85 (East of Whitlock and Baldwin)	1.399 (West of Tate Creek Bridge)	0.55	400	0.11	40	43	57	55	8.6	44.8	28.6	N/A	D
	3	1.399 (West of Tate Creek Bridge)	1.499 (KY 169)	0.10	400	0.11	40	43	57	55	8.6	46.4	28.6	N/A	C
KY 3055	1	0.00 (White Hall Shrine Road)	1.54 (South of KY 627/US 25)	1.54	100	0.11	10	43	57	55	8.6	49.5	24.7	N/A	C
	2	1.54 (South of KY 627/US 25)	1.593 (KY 627/US 25)	0.05	100	0.11	10	43	57	55	8.6	47.8	24.7	N/A	C
KY 1975	1	0.00 (KY 1974)	4.463 (Whites Lane)	4.46	1,300	0.11	140	43	57	55	6.1	42.6	40.5	N/A	D
	2	4.463 (Whites Lane)	5.410 (US 25)	0.95	3,000	0.11	330	43	57	55	6.1	39.7	57.8	N/A	E

LOS E - F

LOS D

LOS A - C

Speed <45, Not Analyzed

Notes:

ADT = 2007 Average Daily Traffic (count or estimate) from CTS Traffic Count Information

K-Factor = Design Hour Factor obtained from KYTC 2004 Traffic Forecasting Report

DHV = 2007 Design Hour Volume (Average Daily Traffic x K-Factor)

Speed Limit obtained from Highway Information System

% Trucks and Buses obtained from 2004 Vehicle Classification System Database. Roadways where data did not exist were estimated using KYTC 2004 Traffic Forecasting Report, and are italicized.

Level of Service (LOS) and % Time Spent Following calculated using Highway Capacity Software Plus.

% RVs were obtained from exhibit 12-14 of the HCM.

Number of access points per mile were obtained from exhibit 12-4 of the HCM.

\*45 mph was used as the posted speed since that is the lowest value HCS + accepts for two-lane highway analysis.

\*\* Lane widths less than 9 ft were entered in as 9 ft since that is the HCS+ minimum.

Sources: Highway Information System Database, KYTC 2004 Traffic Forecasting Report, KYTC Vehicle Classification Database

**Legend**

- LOS A-C
- LOS D
- LOS E
- LOS F
- LOS Cannot Be Calculated
- Interstate
- US HWY
- State Route
- County Boundary
- Corporate Boundary

0 2.5 5 10 Miles

**Source:** KY Transportation Cabinet, KY Office of Geographic Information, KY Infrastructure Authority

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Source: KY Transportation Cabinet, KY Office of Geographic Information, KY Infrastructure Authority

### 3.5 Future No-Build Traffic Operating Conditions

Traffic forecasts for each of the study segments were developed for the No-Build scenario for a future year of 2040. The methodology and findings for the future No-Build traffic forecasts are summarized below. For a more detailed explanation of the traffic forecast methodology, refer to **Appendix A** where the complete Traffic Forecast Methodology Report is included.

#### Traffic Forecast Methodology

To forecast traffic to 2040 volumes, historical growth rates were applied to the various roads in the study area. Each road was divided into segments based on the locations of count stations. A different growth rate based on the historical trends of the count stations was applied to each segment of road. In some cases, there were several roadway segments per count station; therefore, the same growth rate was applied to those segments.

There were some roadway segments that had unusually high growth rates based on historical trends. The historic counts were reviewed for these segments and there were generally three reasons for high historic growth rates. The first is that there was one year with a count that seemed erroneous, either being too high or low. If it seemed apparent that a miscount had occurred, that count was removed and the historical growth rate recalculated. The second reason for an unusually high growth rate is a major event on the roadway occurred, such as a development or widening of the road. If there is a point where traffic growth drastically spiked and continued from that point forward, it was assumed that a major event happened, and traffic growth was calculated based only on counts taken after the major event. The third reason for an unusually high growth rate is very low volumes on the roadway. On some roadways volumes were very low; therefore the growth rates were very high. For example, a roadway had an ADT of less than 100, and in ten years it grew to over 600. This would give a very high historic growth rate; however, because the roadway is small and rural, it is not likely to continue to grow at that rate for the next thirty years. Several roadways like this exist in the study area, and their growth rates were adjusted to be more in line with the growth rates of other similar roads.

#### Future No-Build Traffic Volumes

The 2040 future year No-Build traffic volumes were calculated by applying historic growth rates, as discussed above, to the various segments of roadway. The historic growth rates and 2040 no-build traffic volumes are shown in **Table 1**.

#### 2040 Highway Level of Service and Delay

**Table 7** displays the levels of service for each of the highway sections for the year 2040. **Figure 6** shows the level of service for each highway on a map.

Table 7: 2040 Corridor Levels of Service

Route	Section	Begin Milepoint	End Milepoint	Section Length (miles)	2040 ADT	K-Factor	2040 DHV	Off Peak Direction %	Peak Direction %	Posted Speed Limit (MPH)	% Trucks	Estimated Travel Speed	% Time Spent Following	Density (pc/mi/ln)	LOS
US 27X	1	0.0 (South of Nicholasville)	0.23 (Southbrook Drive)	0.23	13,800	0.112	1550	43	57	55	10.3	37.2	84.5	N/A	E
	2	0.23 (Southbrook Drive)	0.835 (John C Watts Drive)	0.61	13,800	0.1	1380	44	56	55	10.3	32	81.8	N/A	D
	3	0.835 (John C Watts Drive)	1.075 (Longview Drive)	0.24	14,400	0.1	1440	44	56	45	10.3	21.5	82.8	N/A	D
	4	1.075 (Longview Drive)	1.305 (Edgewood Drive)	0.23	17,500	0.1	1750	44	56	35	10.3				
	5	1.305 (Edgewood Drive)	1.586 (Natchez Trace)	0.28	33,400	0.1	3340	44	56	35	10.3				
	6	1.586 (Natchez Trace)	1.88 (Brown Street)	0.29	33,400	0.1	3340	44	56	35	10.3				
	7	1.88 (Brown Street)	2.112 (Chestnut Street)	0.23	23,800	0.1	2380	44	56	35	10.3				
	8	2.112 (Chestnut Street)	2.18 (KY 39/KY 29)	0.07	23,800	0.1	2380	44	56	25	10.3				
	9	2.18 (KY 39/KY 29)	2.38 (KY 169)	0.20	30,500	0.1	3050	44	56	25	10.3				
	10	2.38 (KY 169)	2.882 (Duncan Street)	0.50	35,900	0.1	3590	44	56	35	10.3				
	11	2.882 (Duncan Street)	3.89 (US 27 Bypass)	1.01	60,600	0.1	6060	44	56	35	10.3				
US 27 (South and North of Downtown)	1	0.0 (Garrard-Jessamine County Line)	1.115 (South of Old Danville Road)	1.12	21,200	0.101	2140	44	56	55	8.9	51	N/A	14.8	B
	2	1.115 (South of Old Danville Road)	3.826 (Greystone Drive/KY 1268)	2.71	21,200	0.101	2140	44	56	55	8.9	51	N/A	14.8	B
	3	3.826 (Greystone Drive/KY 1268)	6.011 (US 27 Bypass)	2.19	75,000	0.101	7580	44	56	55	8.9	51	N/A	N/A	F
	4	10.827 (US 27 Bypass)	11.016 (South of Old US 27 ROW)	0.19	74,400	0.101	7510	44	56	55	8.9	51	N/A	N/A	F
	5	11.016 (South of Old US 27 ROW)	13.695 (Industry Parkway)	2.68	74,400	0.101	7510	44	56	55	8.9	49.4	N/A	N/A	F
	6	13.695 (Industry Parkway)	14.807 (KY 1980)	1.11	74,400	0.106	7890	40	60	55	8.9	51.4	N/A	N/A	F
	7	14.807 (KY 1980)	15.278 (Jessamine-Fayette County Line)	0.47	60,600	0.106	6420	40	60	55	8.9	51.4	N/A	N/A	F
	8	0.0 (Fayette-Jessamine Co. Line)	0.956 (Man O War)	0.96	146,700	0.101	14820	44	56	55	6.9	50.1	N/A	N/A	F
I-75	1	87.185 (KY 876)	89.802 (US 25)	2.62	117,500	0.1	11750	44	56	65	16	67	N/A	N/A	F
	2	89.802 (US 25)	91.1 (North of US 25)	1.30	192,400	0.104	20010	43	57	65	16	70	N/A	N/A	F
	3	91.1 (North of US 25)	92.1 (North of Lexington Access Road)	1.00	192,400	0.104	20010	43	57	65	16	70	N/A	N/A	F
	4	92.1 (North of Lexington Access Road)	94.295 (South of KY 627)	2.20	192,400	0.104	20010	43	57	65	16	70	N/A	N/A	F
	5	94.295 (South of KY 627)	94.73 (KY 627)	0.44	192,400	0.104	20010	43	57	65	16	70	N/A	N/A	F
	6	94.73 (KY 627)	97.038 (US 25)	2.31	154,700	0.104	16090	43	57	65	19.1	70	N/A	N/A	F
	7	97.038 (US 25)	97.703 (Madison-Fayette County Line)	0.67	211,100	0.104	21950	43	57	65	19.1	70	N/A	N/A	F
	8	97.703 (Madison-Fayette County Line)	98.516 (US 25)	0.81	211,100	0.104	21950	43	57	65	19.1	70	N/A	N/A	F
	9	98.516 (US 25)	103.89 (KY 418)	5.37	114,100	0.104	11870	43	57	65	19.1	70	N/A	N/A	F
	10	103.89 (KY 418)	108.21 (KY 1425 Man-O-War Underpass)	4.32	140,800	0.104	14640	43	57	65	19.1	70	N/A	N/A	F
KY 1541	1	0 (KY 39)	3.556 (Kissing Ridge Road)	3.56	100	0.11	10	43	57	55	10.3	47.7	24.7	N/A	C
	2	3.556 (Kissing Ridge Road)	4.500 (North of Pollard Pike)	0.94	1,100	0.11	120	43	57	55	10.3	42.9	38.6	N/A	D
	3	4.500 (North of Pollard Pike)	7.000 (North of KY 1981)	2.50	2,400	0.11	260	43	57	55	10.3	40.2	53.3	N/A	D
	4	7.000 (North of KY 1981)	9.668 (KY 39)	2.67	2,400	0.11	260	43	57	55	10.3	40.2	53.3	N/A	D

LOS E - F

LOS D

LOS A - C

Speed <45, Not Analyzed

Notes:  
ADT = 2040 Average Daily Traffic forecasted from 2007 ADT based on historical growth.  
K-Factor = Design Hour Factor obtained from KYTC 2004 Traffic Forecasting Report  
DHV = 2007 Design Hour Volume (Average Daily Traffic x K-Factor)  
Speed Limit obtained from Highway Information System  
% Trucks and Buses obtained from 2004 Vehicle Classification System Database. Roadways where data did not exist were estimated using KYTC 2004 Traffic Forecasting Report, and are italicized.  
Level of Service (LOS) and % Time Spent Following calculated using Highway Capacity Software Plus.  
% RVs were obtained from exhibit 12-14 of the HCM.  
Number of access points per mile were obtained from exhibit 12-4 of the HCM.

\*45 mph was used as the posted speed since that is the lowest value HCS + accepts for two-lane highway analysis.  
\*\* Lane widths less than 9 ft were entered in as 9 ft since that is the HCS+ minimum.

Sources: Highway Information System Database, KYTC 2004 Traffic Forecasting Report, KYTC Vehicle Classification Database

Table 7: 2040 Corridor Levels of Service (cont.)

Route	Section	Begin Milepoint	End Milepoint	Section Length (miles)	2040 ADT	K-Factor	2040 DHV	Off Peak Direction %	Peak Direction %	Posted Speed Limit (MPH)	% Trucks	Estimated Travel Speed (MPH)	% Time Spent Following	Density (pc/mi/ln)	LOS
US 25	1	20.255 (I-75 Bridge)	20.342 (North of I-75 Bridge)	0.09	36,600	0.101	3700	44	56	45	6.9	45	N/A	28.2	D
	2	20.342 (North of I-75 Bridge)	20.49 (Keeneland Drive)	0.09	36,600	0.101	3700	44	56	45	6.9	45	N/A	28.2	D
	3	20.49 (Keeneland Drive)	20.573 (Brandy Lane)	0.08	36,600	0.101	3700	44	56	45	6.9	45	N/A	28.2	D
	4	20.573 (Brandy Lane)	20.771 (Keystone Drive)	0.20	36,600	0.101	3700	44	56	45	6.9	N/A	99.4	N/A	F
	5	20.771 (Keystone Drive)	20.964 (KY 1156)	0.19	36,600	0.101	3700	44	56	45	6.9	N/A	99.4	N/A	F
	6	20.964 (KY 1156)	21.139 (North of KY 1156)	0.18	13,800	0.101	1390	44	56	45	6.9	22	82	N/A	D
	7	21.139 (North of KY 1156)	24.076 (Clay Lane)	2.94	13,800	0.115	1590	36	64	55	12.4	32.2	84.6	N/A	E
	8	24.076 (Clay Lane)	25.373 (KY 627/KY 3055)	1.30	7,900	0.115	910	36	64	55	12.4	38.3	71.5	N/A	E
	9	25.373 (KY 627/KY 3055)	28.161 (KY 2884)	2.79	6,100	0.115	700	36	64	55	12.4	38.7	67.1	N/A	E
	10	0 (South Limits of I-75 Interchange)	.366 (North of I-75 NB Ramps)	0.37	3,900	0.112	440	43	57	55	10.3	45	59.1	N/A	C
	11	.366 (North of I-75 NB Ramps)	1.829 (South of Elk Lick Falls Road)	1.46	3,900	0.112	440	43	57	55	10.3	40.3	59.1	N/A	D
	12	1.829 (South of Elk Lick Falls Road)	2.876 (North of Turner Station Road)	1.05	3,900	0.112	440	43	57	55	10.3	45	59.1	N/A	C
	13	2.876 (North of Turner Station Road)	4.832 (KY 1975)	1.96	3,900	0.112	440	43	57	55	10.3	44.6	59.1	N/A	D
	14	4.832 (KY 1975)	8.144 (KY 418)	3.31	7,000	0.112	780	43	57	55	10.3	42.6	69.4	N/A	D
KY 1980	1	8.144 (KY 418)	9.734 (Man O War Boulevard)	1.59	53,400	0.101	5390	44	56	55	6.9	53	N/A	38.1	E
	2	3.025 (US 27)	3.68 (West of Leeburton Road)	0.66	5,800	0.115	670	36	64	55	10.2	38.4	66.6	N/A	E
	3	3.68 (West of Leeburton Road)	4.06 (East of Noland Drive)	0.38	5,800	0.115	670	36	64	45	10.2	28.4	66.6	N/A	E
	4	4.06 (East of Noland Drive)	4.69 (Ashgrove Lane)	0.63	5,800	0.115	670	36	64	55	10.2	38.4	66.6	N/A	E
	5	4.69 (Ashgrove Lane)	5.06 (East of Young Drive)	0.37	9,100	0.115	1050	36	64	35	10.2				
	6	5.06 (East of Young Drive)	6.02 (West of Spurlock Lane)	0.96	9,100	0.115	1050	36	64	55	10.2	36.4	75.3	N/A	E
	7	6.02 (West of Spurlock Lane)	6.69 (East of Mackey Pike)	0.67	9,100	0.115	1050	36	64	45	10.2	26.4	75.3	N/A	E
KY 1974	1	6.69 (East of Mackey Pike)	7.451 (Fayette County Line)	0.76	9,100	0.115	1050	36	64	55	10.2	36.4	75.3	N/A	E
	2	0.00 (KY 169)	.16 (South of KY 1975)	0.16	1,200	0.112	130	43	57	35	14				
	3	.16 (South of KY 1975)	1.667 (Crawley Lane)	1.51	1,200	0.112	130	43	57	55	14	40.9	40.2	N/A	D
	4	1.667 (Crawley Lane)	4.228 (DeLong Road)	3.04	2,500	0.112	280	43	57	55	14	38.3	55.5	N/A	E
	5	4.228 (DeLong Road)	4.711 (South of Hickman Creek Bridge)	0.48	12,900	0.1	1290	44	56	55	8.7	31	80	N/A	E
	6	4.711 (South of Hickman Creek Bridge)	5.443 (KY 1980)	0.73	12,900	0.1	1290	44	56	55	8.7	31	80	N/A	E
KY 1981	1	5.443 (KY 1980)	7.782 (Man O War Boulevard)	2.34	31,100	0.1	3110	44	56	55	8.7	45	N/A	25.3	C
	2	0.00 (KY 1541)	2.365 (Marble Creek Lane)	2.37	600	0.11	70	43	57	55	10.3	44.9	32.6	N/A	D
	3	2.365 (Marble Creek Lane)	3.30 (South of KY 169)	0.94	600	0.11	70	43	57	55	10.3	44.9	32.6	N/A	D
	4	3.30 (South of KY 169)	3.668 (KY 169)	0.37	500	0.11	60	43	57	35	10.3				
	5	3.668 (KY 169)	3.998 (North of Caveson Way)	0.30	7,100	0.11	780	43	57	55	8.6	37.7	70.6	N/A	E

LOS E - F

LOS D

LOS A - C

Speed <45, Not Analyzed

Notes:

ADT = 2040 Average Daily Traffic forecasted from 2007 ADT based on historical growth.

K-Factor = Design Hour Factor obtained from KYTC 2004 Traffic Forecasting Report

DHV = 2007 Design Hour Volume (Average Daily Traffic x K-Factor)

Speed Limit obtained from Highway Information System

% Trucks and Buses obtained from 2004 Vehicle Classification System Database. Roadways where data did not exist were estimated using KYTC 2004 Traffic Forecasting Report, and are italicized.

Level of Service (LOS) and % Time Spent Following calculated using Highway Capacity Software Plus.

% RVs were obtained from exhibit 12-14 of the HCM.

Number of access points per mile were obtained from exhibit 12-4 of the HCM.

\*45 mph was used as the posted speed since that is the lowest value HCS + accepts for two-lane highway analysis.

\*\* Lane widths less than 9 ft were entered in as 9 ft since that is the HCS+ minimum.

Sources: Highway Information System Database, KYTC 2004 Traffic Forecasting Report, KYTC Vehicle Classification Database

Table 7: 2040 Corridor Levels of Service (cont.)

Route	Section	Begin Milepoint	End Milepoint	Section Length (miles)	2040 ADT	K-Factor	2040 DHV	Off Peak Direction %	Peak Direction %	Posted Speed Limit (MPH)	% Trucks	Estimated Travel Speed (MPH)	% Time Spent Following	Density (pc/mi/ln)	LOS
KY 169	1	1.349 (I-75 Underpass)	2.240 (Goggins Lane)	0.89	15,100	0.12	1810	42	58	55	7.8	29.6	87.1	N/A	E
	2	2.240 (Goggins Lane)	3.082 (Boone Way)	0.84	15,700	0.12	1880	42	58	55	7.8	29	87.9	N/A	E
	3	3.082 (Boone Way)	4.877 (Crutcher Pike)	1.80	15,700	0.115	1810	36	64	55	7.8	331.6	87.1	N/A	E
	4	4.877 (Crutcher Pike)	6.184 (KY 1984)	1.31	2,200	0.115	250	36	64	55	7.8	41.5	51.9	N/A	D
	5	6.184 (KY 1984)	8.051 (KY 1985)	1.87	1,400	0.115	160	36	64	55	7.8	43.1	43.8	N/A	D
	6	8.051 (KY 1985)	8.478 (Buffalo Road)	0.43	700	0.115	80	36	64	55	7.8	44.6	35.6	N/A	D
	7	8.478 (Buffalo Road)	11.74 (Ervin Sloan East Road)	3.26	700	0.115	80	36	64	55	7.8	43	35.6	N/A	D
	8	11.74 (Ervin Sloan East Road)	11.869 (KY 1156 / Carvers Ferry Road)	0.13	700	0.115	80	36	64	55	7.8	43	35.6	N/A	D
	9	11.869 (KY 1156 / Carvers Ferry Road)	12.511 (Approach to Valley View Ferry)	0.64	400	0.115	50	36	64	55	7.8	44.3	32.2	N/A	D
	10	0.00 (Approach to Valley View Ferry)	1.939 (South of Newman Road)	1.94	800	0.115	90	36	64	55	5.2	45.7	36.2	N/A	C
	11	1.939 (South of Newman Road)	2.030 (North of KY 1974)	0.09	800	0.115	90	36	64	55	5.2	45.4	36.4	N/A	C
	12	2.030 (North of KY 1974)	3.598 (South of Burnside Drive)	1.57	2,900	0.115	330	36	64	55	5.2	41.1	57.1	N/A	D
	13	3.598 (South of Burnside Drive)	4.218 (KY 1981)	0.62	2,900	0.115	330	36	64	35	5.2				
	14	4.218 (KY 1981)	7.733 (Vince Road / Bethany Road)	3.52	11,600	0.115	1330	36	64	55	5.2	35.8	80.5	N/A	E
	15	7.733 (Vince Road / Bethany Road)	9.482 (Locust Heights)	1.75	12,300	0.115	1410	36	64	55	5.2	35	82.2	N/A	E
	16	9.482 (Locust Heights)	9.918 (North of Glencove Ave)	0.44	12,300	0.1	1230	44	56	45	5.2	25.1	78.8	N/A	E
	17	9.918 (North of Glencove Ave)	10.028 (Liberty Street)	0.11	12,300	0.1	1230	44	56	35	5.2				
	18	10.028 (Liberty Street)	10.362 (Bell Court)	0.33	6,600	0.1	660	44	56	35	5.2				
	19	10.362 (Bell Court)	10.458 (US 27)	0.10	6,600	0.1	660	44	56	25	5.2				
KY 876	1	0.00 (KY 595)	2.387 (Bogle Mill Road)	2.39	1,700	0.11	190	43	57	55	10.3	41.2	46.4	N/A	D
	2	2.387 (Bogle Mill Road)	3.99 (West of Redwood Drive)	1.60	1,400	0.11	150	43	57	55	10.3	40.6	42	N/A	D
	3	3.99 (West of Redwood Drive)	4.77 (Old Pond Way/Mule Shed Road)	0.78	1,400	0.11	150	43	57	45	10.3	32.2	42	N/A	E
	4	4.77 (Old Pond Way/Mule Shed Road)	5.15 (West of Curtis Pike)	0.38	5,500	0.11	610	43	57	45	10.3	27.3	64.8	N/A	E
	5	5.15 (West of Curtis Pike)	6.528 (Willis Branch Road)	1.38	5,500	0.11	610	43	57	45	10.3	28.4	64.8	N/A	E
	6	6.528 (Willis Branch Road)	6.95 (West of Amberly Way)	0.42	27,100	0.11	2980	43	57	45	10.3	N/A	96.9	N/A	F
	7	6.95 (West of Amberly Way)	7.097 (I-75 Ramp)	0.15	27,100	0.11	2980	43	57	45	10.3	N/A	96.9	N/A	F
KY 1156	1	0.00 (US 25)	.64 (South of Secretariat Drive)	0.64	5,400	0.12	650	42	58	35	5.1				
	2	.64 (South of Secretariat Drive)	1.352 (Boone Way)	0.71	5,400	0.12	650	42	58	55	5.1	35.2	65.3	N/A	E
	3	1.352 (Boone Way)	4.5 (South of Clay Lane)	3.15	3,000	0.11	330	43	57	55	5.1	38.2	57.6	N/A	E
	4	4.5 (South of Clay Lane)	5.68 (South of Kentucky River Road)	1.18	3,000	0.11	330	43	57	55	5.1	38.2	57.6	N/A	E
	5	5.68 (South of Kentucky River Road)	6.278 (Kentucky River Road)	0.60	3,000	0.11	330	43	57	55	5.1	38.2	57.6	N/A	E
	6	6.278 (Kentucky River Road)	8.7 (South of Tate Creek Bridge)	2.42	300	0.11	30	43	57	55	5.1	45.3	27.2	N/A	C
	7	8.7 (South of Tate Creek Bridge)	9.376 (KY 169)	0.68	300	0.11	30	43	57	55	5.1	45.3	27.2	N/A	C

LOS E - F

LOS D

LOS A - C

Speed <45, Not Analyzed

Notes:  
ADT = 2040 Average Daily Traffic forecasted from 2007 ADT based on historical growth.  
K-Factor = Design Hour Factor obtained from KYTC 2004 Traffic Forecasting Report  
DHV = 2007 Design Hour Volume (Average Daily Traffic x K-Factor)  
Speed Limit obtained from Highway Information System  
% Trucks and Buses obtained from 2004 Vehicle Classification System Database. Roadways where data did not exist were estimated using KYTC 2004 Traffic Forecasting Report, and are italicized.  
Level of Service (LOS) and % Time Spent Following calculated using Highway Capacity Software Plus.  
% RVs were obtained from exhibit 12-14 of the HCM.  
Number of access points per mile were obtained from exhibit 12-4 of the HCM.

\*45 mph was used as the posted speed since that is the lowest value HCS + accepts for two-lane highway analysis.  
\*\* Lane widths less than 9 ft were entered in as 9 ft since that is the HCS+ minimum.

Sources: Highway Information System Database, KYTC 2004 Traffic Forecasting Report, KYTC Vehicle Classification Database

Table 7: 2040 Corridor Levels of Service (cont.)

Route	Section	Begin Milepoint	End Milepoint	Section Length (miles)	2040 ADT	K-Factor	2040 DHV	Off Peak Direction %	Peak Direction %	Posted Speed Limit (MPH)	% Trucks	Estimated Travel Speed (MPH)	% Time Spent Following	Density (pc/mi/ln)	LOS
KY 39	1	0.00 (North Bank of Kentucky River)	0.12 (KY 1541)	0.12	100	0.11	10	43	57	55	7.4	47.7	24.7	N/A	C
	2	0.12 (KY 1541)	2.454 (KY 1268)	2.33	100	0.11	10	43	57	55	7.4	47.7	24.7	N/A	C
	3	2.454 (KY 1268)	3.747 (Big Hickman Creek Bridge)	1.29	1,700	0.11	190	43	57	55	7.4	41.4	46	N/A	D
	4	3.747 (Big Hickman Creek Bridge)	5.56 (North of Old Sulphur Well Road)	1.81	1,700	0.11	190	43	57	55	7.4	42.5	46	N/A	D
	5	5.56 (North of Old Sulphur Well Road)	5.83 (North of Elmfork Road)	0.27	1,700	0.11	190	43	57	45	7.4	32.5	46	N/A	E
	6	5.83 (North of Elmfork Road)	7.550 (KY 1541)	1.72	1,700	0.11	190	43	57	55	7.4	42.5	46	N/A	D
	7	7.550 (KY 1541)	8.38 (South of Ash Drive)	0.83	5,600	0.11	620	43	57	55	7.4	40	64.9	N/A	D
	8	8.38 (South of Ash Drive)	8.548 (Ash Drive)	0.17	5,600	0.11	620	43	57	35	7.4				
	9	8.548 (Ash Drive)	8.875 (Miles Road)	0.33	5,600	0.1	560	44	56	35	7.4				
	10	8.875 (Miles Road)	9.29 (Hager Lane)	0.42	17,700	0.1	1770	44	56	35	7.4				
	11	9.29 (Hager Lane)	9.404 (KY 29 / US 27)	0.11	17,700	0.1	1770	44	56	25	7.4				
CS 4524 (Man O' War Blvd)	1	6.561 (Nicholasville Road)	8.566 (Tates Creek Road)	2.01	77,600	0.1	7760	44	56	45	8.7	45	N/A	N/A	F
	2	8.566 (Tates Creek Road)	10.285 (Armstrong Mill Road)	1.72	51,300	0.1	5130	44	56	45	8.7	45	N/A	38.4	E
	3	10.285 (Armstrong Mill Road)	11.821 (Alumni Drive)	1.54	98,900	0.1	9890	44	56	45	8.7	45	N/A	N/A	F
	4	11.821 (Alumni Drive)	12.792 (US 25 / Richmond Road)	0.97	135,900	0.1	13590	44	56	45	8.7	45	N/A	N/A	F
	5	12.792 (US 25 / Richmond Road)	13.454 (Palumbo Drive)	0.66	73,300	0.1	7330	44	56	45	8.7	45	N/A	N/A	F
	6	13.454 (Palumbo Drive)	14.254 (KY 1927 / Todds Road)	0.80	63,900	0.1	6390	44	56	45	8.7	45	N/A	N/A	F
	7	14.254 (KY 1927 / Todds Road)	15.241 (I-75 / KY 1425)	0.99	56,100	0.1	5610	44	56	45	8.7	45	N/A	43.1	E
KY 595	1	16.014 (KY 876)	17.03 (Dry Branch Road)	1.02	700	0.11	80	43	57	55	8.6	42.9	33.7	N/A	D
	2	17.03 (Dry Branch Road)	20.78 (North of Sledd Branch Road)	3.75	2,600	0.11	290	43	57	55	8.6	38.4	55.5	N/A	E
	3	20.78 (North of Sledd Branch Road)	22.212 (New Road)	1.43	2,600	0.11	290	43	57	55	8.6	40.6	55.5	N/A	D
	4	22.212 (New Road)	24.55 (South of Poosey Ridge Road)	2.34	200	0.11	20	43	57	55	8.6	47.9	26	N/A	C
	5	24.55 (South of Poosey Ridge Road)	24.604 (Poosey Ridge Road)	0.05	200	0.11	20	43	57	55	8.6	46.8	26	N/A	C
KY 1984	1	0.00 (Newby Road)	.751 (West of Kanatzar Lane)	0.75	3,200	0.11	350	43	57	55	8.6	38.7	59.7	N/A	E
	2	.751 (West of Kanatzar Lane)	1.051 (West of Haden Heights)	0.30	3,200	0.11	350	43	57	55	8.6	40.3	59.7	N/A	D
	3	1.051 (West of Haden Heights)	2.06 (KY 169)	1.01	3,200	0.11	350	43	57	55	8.6	38.7	59.7	N/A	E
KY 1985	1	0.00 (Whitlock Road / Baldwin Road)	.85 (East of Whitlock and Baldwin)	0.85	500	0.11	60	43	57	55	8.6	43.8	31.2	N/A	D
	2	.85 (East of Whitlock and Baldwin)	1.399 (West of Tate Creek Bridge)	0.55	500	0.11	60	43	57	55	8.6	43.8	31.2	N/A	D
	3	1.399 (West of Tate Creek Bridge)	1.499 (KY 169)	0.10	500	0.11	60	43	57	55	8.6	45.4	31.2	N/A	C
KY 3055	1	0.00 (White Hall Shrine Road)	1.54 (South of KY 627/US 25)	1.54	100	0.11	10	43	57	55	8.6	49.5	24.7	N/A	C
	2	1.54 (South of KY 627/US 25)	1.593 (KY 627/US 25)	0.05	100	0.11	10	43	57	55	8.6	47.8	24.7	N/A	C
KY 1975	1	0.00 (KY 1974)	4.463 (Whites Lane)	4.46	3,700	0.11	410	43	57	55	6.1	40	57.9	N/A	E
	2	4.463 (Whites Lane)	5.410 (US 25)	0.95	7,200	0.11	790	43	57	55	6.1	37.7	70.5	N/A	E

LOS E - F

LOS D

LOS A - C

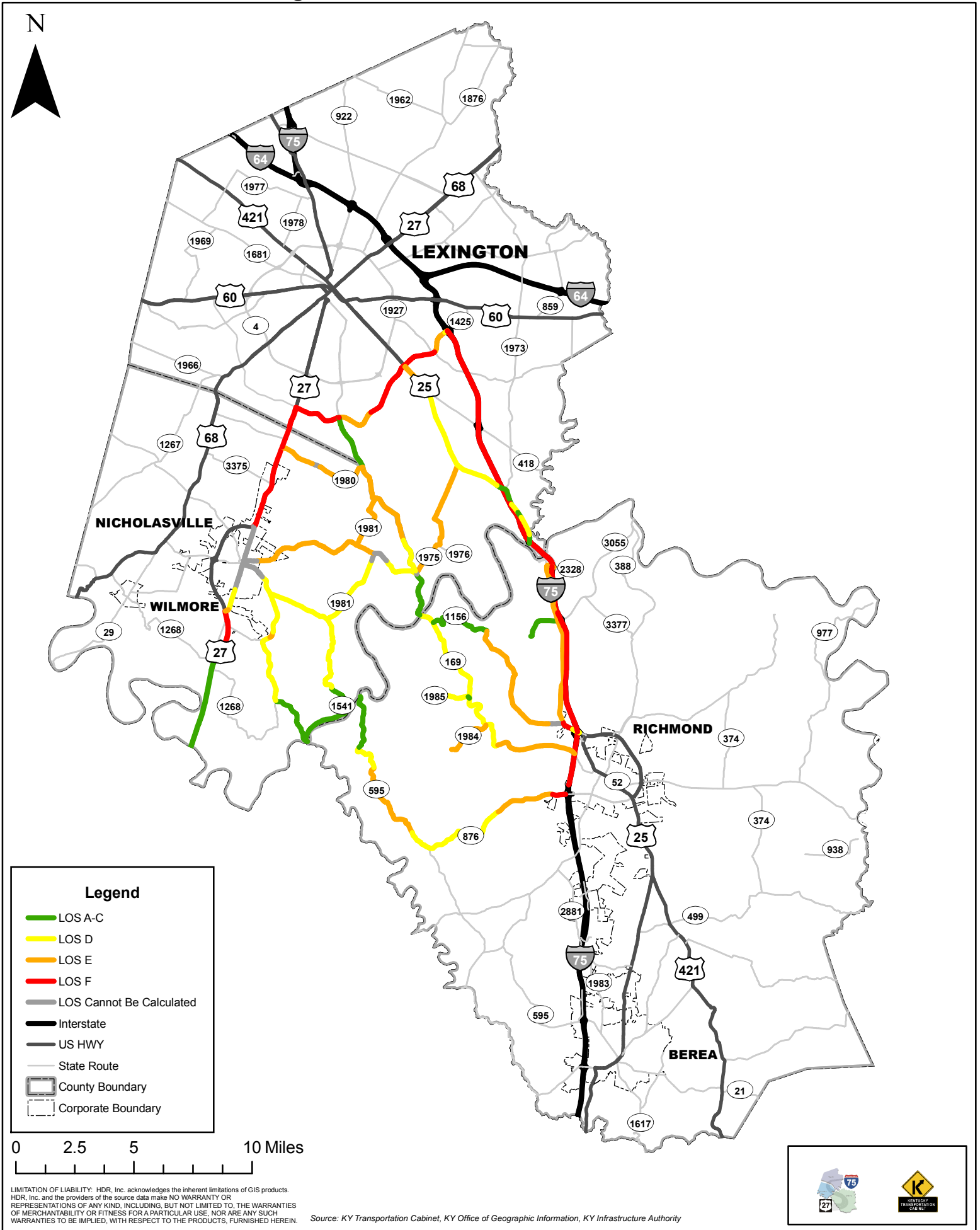
Speed <45, Not Analyzed

Notes:  
ADT = 2040 Average Daily Traffic forecasted from 2007 ADT based on historical growth.  
K-Factor = Design Hour Factor obtained from KYTC 2004 Traffic Forecasting Report  
DHV = 2007 Design Hour Volume (Average Daily Traffic x K-Factor)  
Speed Limit obtained from Highway Information System  
% Trucks and Buses obtained from 2004 Vehicle Classification System Database. Roadways where data did not exist were estimated using KYTC 2004 Traffic Forecasting Report, and are italicized.  
Level of Service (LOS) and % Time Spent Following calculated using Highway Capacity Software Plus.  
% RVs were obtained from exhibit 12-14 of the HCM.  
Number of access points per mile were obtained from exhibit 12-4 of the HCM.

\*45 mph was used as the posted speed since that is the lowest value HCS + accepts for two-lane highway analysis.  
\*\* Lane widths less than 9 ft were entered in as 9 ft since that is the HCS+ minimum.

Sources: Highway Information System Database, KYTC 2004 Traffic Forecasting Report, KYTC Vehicle Classification Database

Figure 6: 2040 Corridor Levels of Service



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### 3.6 Crash Analysis

#### Crash Analysis Methodology

The Kentucky Transportation Cabinet provided crash data for a three-year period from January 1, 2004 through December 31, 2006. **Figure 7** shows the locations of these crashes by crash type (fatality, injury or property damage only).

Crash rates were computed for specific segments of each major study area highway using the methodology provided in the crash analysis report periodically published by the Kentucky Transportation Center (KTC)<sup>1</sup>. The section crash rates are based on the number of crashes on a specified section, the average daily traffic on the roadway, the time frame of analysis, and the length of the section. They are expressed in terms of crashes per 100 million vehicle-miles. A section's crash rate was then compared to a statewide critical crash rate<sup>2</sup> derived from critical crash rate tables for highway sections in the KTC crash report (Appendix D of KTC crash report). This comparison is expressed as a ratio of the section crash rate to the critical crash rate and is referred to as the critical crash rate factor. Sections with a critical crash rate factor greater than one indicate that it is more likely a crash will occur at this location than other similar locations throughout the state, and there is a potential improvement to the location that can make it safer.

The section crash rate is also compared directly to the statewide average crash rate presented in the KTC crash report. The statewide averages consider all crashes for a specified period that are listed in the Collision Report Analysis for Safer Highways (CRASH) database maintained by the Kentucky State Police and stratified by functional classification (Table B-2 in KTC crash report). Section rates that exceed the statewide average crash rate but not the critical crash rate may be problem areas, but they are not statistically proven to be higher crash areas. Therefore, this second comparison is used to identify a second tier of highway sections that may have crash problems and could be considered for safety improvements if warranted based on further analysis.

#### Section Crash Analysis

For the major roadways within the study area, many of the observed section crash rates exceed the critical crash rate for that roadway type. The critical crash rate factors range from 0.08 to 8.90. US 27 through downtown Nicholasville, most of Man O' War Boulevard, US 25 north of the Kentucky River and many state roads between US 27 and I-75 have sections whose critical crash rate exceeds the statewide critical rate. There are many other sections along US 27, I-75 and state highways in between the two that are not confirmed high crash rate sections (i.e. they do not exceed the critical crash rate), but their current crash rates exceed the statewide average crash rate.

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<sup>1</sup> Analysis of Traffic Crash Data in Kentucky (2002 – 2006), Kentucky Transportation Center Research Report KTC-07-26/KSP2-07-1F.

<sup>2</sup> The critical crash rate is the threshold above which an analyst can be statistically certain (at a 99.5% confidence level) that the section crash rate exceeds the average crash rate for a similar roadway and is not mistakenly shown as higher than the average due to randomly occurring crashes.

**Table 8** shows the crash statistics for the segments analyzed and **Figure 8** shows the segments on a map.

# Figure 7: Crash Locations

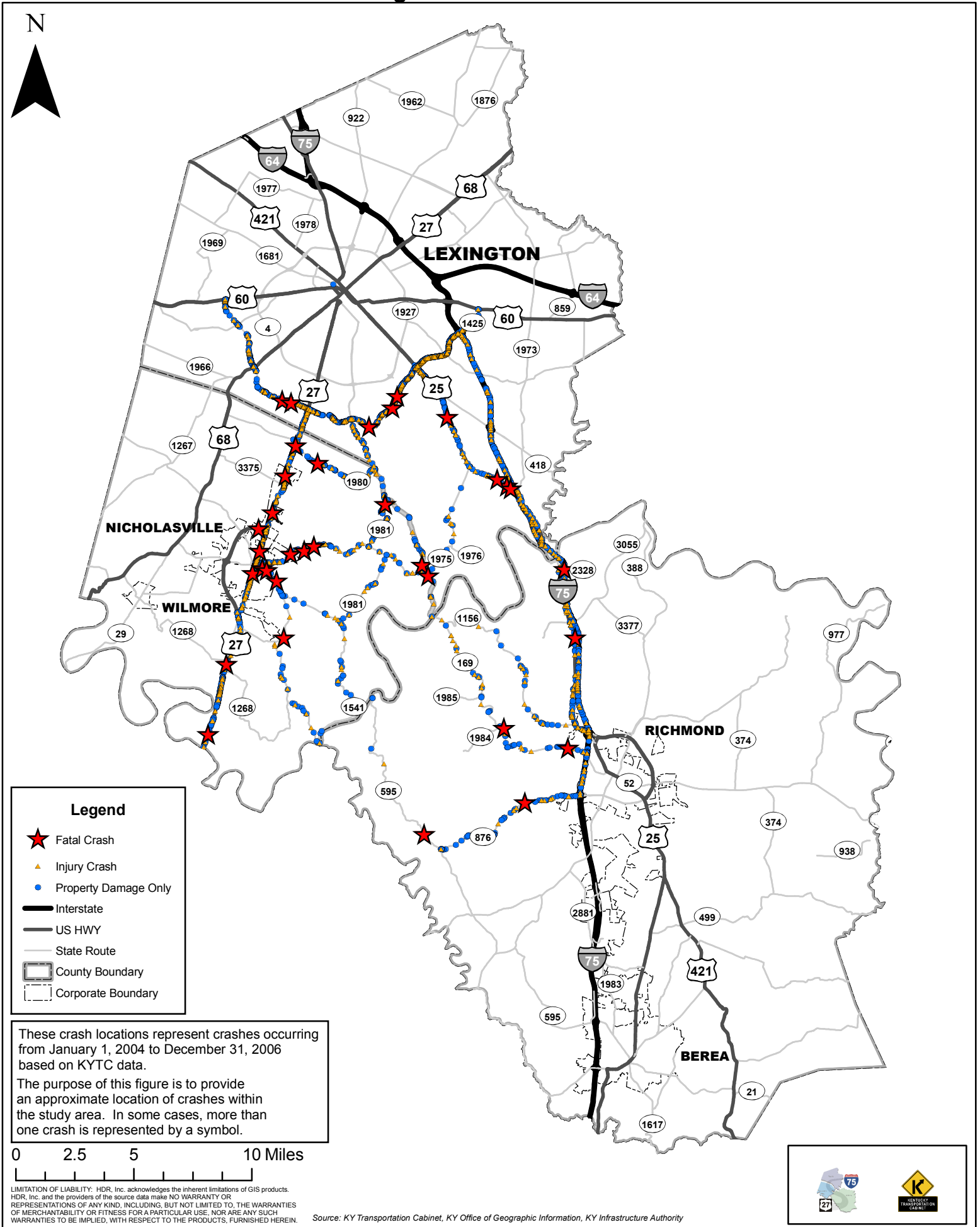





Table 8: Crash Rates by Segment

Route	Section	Begin Milepoint	End Milepoint	Total Crashes	Average Daily Traffic	Section Length (miles)	Exposure "M" (100 or 1 MVM)	Statewide Average Crash Rate	Section Crash Rate	Statewide Critical Crash Rate	Critical Crash Rate Factor
US 27X (Downtown Nicholasville)	1	0.000 (South of Nicholasville)	1.075 (Longview Drive)	37	10,540	1.075	0.124	242	298	360	0.83
	2	1.076 (Longview Drive)	2.180 (KY 39/KY 29)	126	20,220	1.104	0.244	242	515	332	1.55
	3	2.181 (KY 39/KY 29)	3.890 (US 27 Bypass)	323	27,090	1.709	0.507	242	637	311	2.05
US 27 (South and North of Downtown)	1	0.000 (Garrard-Jessamine Co Line)	3.826 (Greystone Drive/KY 1268)	159	19,200	3.826	0.804	100	198	317	0.62
	2	3.827 (Greystone Drive/KY 1268)	6.011 (US 27 Bypass-South End)	61	24,600	2.184	0.588	100	104	321	0.32
	3	10.827 (US 27 Bypass-North End)	13.695 (Industry Parkway)	374	38,700	2.868	1.215	100	308	486	0.63
	4	13.696 (Industry Parkway)	15.278 (Jessamine-Fayette Co Line)	102	38,220	1.582	0.662	92	154	286	0.54
	5	0.000 (Jessamine-Fayette Co Line)	0.956 (Man O War Blvd)	206	55,300	0.956	0.579	100	356	501	0.71
I-75	1	87.185 (KY 876)	89.802 (US 25)	90	53,700	2.617	1.539	75	58	111	0.53
	2	89.803 (US 25)	94.730 (KY 627)	181	65,900	4.927	3.555	42	51	61	0.83
	3	94.731 (KY 627)	97.038 (US 25)	97	62,200	2.307	1.571	42	62	65	0.95
	4	97.039 (US 25)	98.516 (US 25)	47	65,700	1.477	1.063	42	44	69	0.64
	5	98.517 (US 25)	103.890 (KY 418)	146	65,400	5.373	3.848	42	38	61	0.62
	6	103.891 (KY 418)	108.21 (KY 1425/Man O War Blvd)	137	53,100	4.319	2.511	42	55	62	0.88

 Critical Crash Rate Factor >1, Section Crash Rate Exceeds Statewide Critical Rate (High Crash Rate Section)  
 Critical Crash Rate Factor <1, Section Crash Rate Exceeds Statewide Average Rate  
 Critical Crash Rate Factor <1, Section Crash Rate Lower Than Statewide Average Rate

## Notes:

Analysis Period: 3 Years (2004 to 2006)

Crash rates are expressed in crashes per 100 MVM (100 million vehicle miles traveled)

Exposure (M) = [(ADT) x (365) x (Time Frame of Analysis (Years)) x (Section Length)] / 100,000,000

Section Crash Rate = Total Crashes / Exposure

Critical Crash Rate Factor = Section Crash Rate / Statewide Critical Crash Rate

ADT = Average Daily Traffic, MVM = Million Vehicle Miles

## Sources:

Crash data for 2004 to 2006 from KYTC Data

Statewide Rates from KTC Research Report KTC-07-26/KSP2-07-1F, Analysis of Traffic Crash Data in Kentucky (2002 - 2006)

**Table 8: Crash Rates by Segment (Cont.)**

Route	Section	Begin Milepoint	End Milepoint	Total Crashes	Average Daily Traffic	Section Length (miles)	Exposure "M" (100 or 1 MVM)	Statewide Average Crash Rate	Section Crash Rate	Statewide Critical Crash Rate	Critical Crash Rate Factor
US 25	1	20.255 (I-75 Bridge)	20.964 (KY 1156)	112	13,800	0.709	0.107	297	1045	368	2.84
	2	20.965 (KY 1156)	24.076 (Clay Lane)	35	6,300	3.111	0.215	206	163	303	0.54
	3	24.077 (Clay Lane)	25.373 (KY 627/KY 3055)	14	3,600	1.296	0.051	206	274	377	0.73
	4	25.374 (KY 627/KY 3055)	28.161 (KY 2328)	16	2,800	2.787	0.085	206	187	346	0.54
	5	0.000 (South Limits of I-75)	2.876 (North of Turner Station Rd)	54	3,100	2.876	0.098	177	553	338	1.64
	6	2.877 (North of Turner Station Rd)	4.832 (KY 1975)	24	3,100	1.955	0.066	177	362	354	1.02
	7	4.833 (KY 1975)	8.144 (KY 418)	447	4,400	3.311	0.160	177	2802	315	8.90
	8	8.144 (KY 418)	9.734 (Man O War Blvd)	183	30,600	1.590	0.533	297	343	325	1.06
KY 1980	1	3.025 (US 27)	4.690 (Ashgrove Lane)	43	3,300	1.665	0.060	206	715	365	1.96
	2	4.691 (Ashgrove Lane)	6.690 (East of Mackey Pike)	33	2,500	1.999	0.055	206	603	368	1.64
	3	6.691 (East of Mackey Pike)	7.451 (Fayette County Line)	21	2,500	0.760	0.021	206	1009	470	2.15
KY 1974	1	0.000 (KY 169)	1.667 (Crawley Lane)	14	900	1.667	0.016	177	852	504	1.69
	2	1.668 (Crawley Lane)	4.228 (DeLong Road)	20	1,500	2.56	0.042	177	476	400	1.19
	3	4.229 (DeLong Road)	5.443 (KY 1980)	8	6,500	1.214	0.086	242	93	393	0.24
	4	5.443 (KY 1980)	7.782 (Man O War Boulevard)	88	10,300	2.339	0.264	242	334	531	0.63

	Critical Crash Rate Factor >1, Section Crash Rate Exceeds Statewide Critical Rate (High Crash Rate Section)
	Critical Crash Rate Factor <1, Section Crash Rate Exceeds Statewide Average Rate
	Critical Crash Rate Factor <1, Section Crash Rate Lower Than Statewide Average Rate

**Notes:**

Analysis Period: 3 Years (2004 to 2006)

Crash rates are expressed in crashes per 100 MVM (100 million vehicle miles traveled)

Exposure (M) = [(ADT) x (365) x (Time Frame of Analysis (Years)) x (Section Length)] / 100,000,000

Section Crash Rate = Total Crashes / Exposure

Critical Crash Rate Factor = Section Crash Rate / Statewide Critical Crash Rate

ADT = Average Daily Traffic, MVM = Million Vehicle Miles

**Sources:**

Crash data for 2004 to 2006 from KYTC Data

Statewide Rates from KTC Research Report KTC-07-26/KSP2-07-1F, Analysis of Traffic Crash Data in Kentucky (2002 - 2006)

**Table 8: Crash Rates by Segment (Cont.)**

Route	Section	Begin Milepoint	End Milepoint	Total Crashes	Average Daily Traffic	Section Length (miles)	Exposure "M" (100 or 1 MVM)	Statewide Average Crash Rate	Section Crash Rate	Statewide Critical Crash Rate	Critical Crash Rate Factor
KY 1981	1	0.000 (KY 1541)	3.668 (KY 169)	22	600	3.668	0.024	224	913	463	1.97
	2	3.669 (KY 169)	6.130 (KY 1974 @ Fayette Co Line)	61	2,200	2.461	0.059	189	1029	368	2.80
KY 169	1	1.349 (I-75 Underpass)	3.082 (Boone Way)	28	5,110	1.733	0.097	106	289	374	0.77
	2	3.083 (Boone Way)	4.877 (Crutcher Pike)	9	4,500	1.794	0.088	206	102	339	0.30
	3	4.878 (Crutcher Pike)	6.184 (KY 1984)	8	1,400	1.306	0.020	206	400	472	0.85
	4	6.185 (KY 1984)	8.051 (KY 1985)	4	1,000	1.866	0.020	206	196	461	0.42
	5	8.052 (KY 1985)	11.869 (KY 1156)	16	600	3.817	0.025	206	638	458	1.39
	6	11.870 (KY 1156)	12.511 (Approach to Valley View)	1	400	0.641	0.003	206	356	964	0.37
	7	0.000 (Approach to Valley View)	2.030 (North of KY 1974)	10	600	2.03	0.013	206	750	526	1.43
	8	2.031 (North of KY 1974)	4.218 (KY 1981)	18	1,200	2.187	0.029	206	626	426	1.47
	9	4.219 (KY 1981)	7.733 (Vince Rd/Bethany Rd)	43	3,600	3.514	0.139	206	310	321	0.97
	10	7.734 (Vince Rd/Bethany Rd)	9.482 (Locust Heights)	21	4,500	1.748	0.086	206	244	341	0.71
	11	9.483 (Locust Heights)	10.458 (US 27)	35	4,190	0.975	0.045	242	782	431	1.82

Critical Crash Rate Factor >1, Section Crash Rate Exceeds Statewide Critical Rate (High Crash Rate Section)

Critical Crash Rate Factor <1, Section Crash Rate Exceeds Statewide Average Rate

Critical Crash Rate Factor <1, Section Crash Rate Lower Than Statewide Average Rate

**Notes:**

Analysis Period: 3 Years (2004 to 2006)

Crash rates are expressed in crashes per 100 MVM (100 million vehicle miles traveled)

Exposure (M) = [(ADT) x (365) x (Time Frame of Analysis (Years)) x (Section Length)] / 100,000,000

Section Crash Rate = Total Crashes / Exposure

Critical Crash Rate Factor = Section Crash Rate / Statewide Critical Crash Rate

ADT = Average Daily Traffic, MVM = Million Vehicle Miles

**Sources:**

Crash data for 2004 to 2006 from KYTC Data

Statewide Rates from KTC Research Report KTC-07-26/KSP2-07-1F, Analysis of Traffic Crash Data in Kentucky (2002 - 2006)

**Table 8: Crash Rates by Segment (Cont.)**

Route	Section	Begin Milepoint	End Milepoint	Total Crashes	Average Daily Traffic	Section Length (miles)	Exposure "M" (100 or 1 MVM)	Statewide Average Crash Rate	Section Crash Rate	Statewide Critical Crash Rate	Critical Crash Rate Factor
KY 1975	1	0.000 (KY 1974)	4.463 (Whites Lane)	18	1,500	4.463	0.073	224	246	351	0.70
	2	4.464 (Whites Lane)	5.410 (US 25)	1	3,100	0.946	0.032	224	31	412	0.08
KY 39	1	0.000 (N. Bank of Kentucky River)	2.454 (KY 1268)	14	100	2.454	0.003	224	5210	966	5.39
	2	2.455 (KY 1268)	7.550 (KY 1541)	24	900	5.095	0.050	224	478	376	1.27
	3	7.551 (KY 1541)	8.875 (Miles Road)	11	3,400	1.324	0.049	224	223	380	0.59
	4	8.876 (Miles Road)	9.404 (KY 29/US 27)	36	7,600	0.528	0.044	242	819	426	1.92
KY 1541	1	0.000 (KY 39)	3.556 (Kissing Ridge Road)	4	100	3.556	0.004	224	1027	848	1.21
	2	3.557 (Kissing Ridge Road)	4.500 (North of Pollard Pike)	6	500	0.943	0.005	224	1162	720	1.61
	3	4.501 (North of Pollard Pike)	9.668 (KY 39)	19	1,300	5.167	0.074	224	258	348	0.74
KY 595	1	16.014 (KY 876)	22.212 (New Road)	4	850	6.198	0.058	189	69	372	0.19
	2	22.213 (New Road)	24.604 (Poosey Ridge Road)	2	100	2.391	0.003	189	764	1058	0.72

Critical Crash Rate Factor >1, Section Crash Rate Exceeds Statewide Critical Rate (High Crash Rate Section)  
Critical Crash Rate Factor <1, Section Crash Rate Exceeds Statewide Average Rate  
Critical Crash Rate Factor <1, Section Crash Rate Lower Than Statewide Average Rate

**Notes:**

Analysis Period: 3 Years (2004 to 2006)  
 Crash rates are expressed in crashes per 100 MVM (100 million vehicle miles traveled)  
 $\text{Exposure (M)} = [(\text{ADT}) \times (365) \times (\text{Time Frame of Analysis (Years)}) \times (\text{Section Length})] / 100,000,000$   
 $\text{Section Crash Rate} = \text{Total Crashes} / \text{Exposure}$   
 $\text{Critical Crash Rate Factor} = \text{Section Crash Rate} / \text{Statewide Critical Crash Rate}$   
 ADT = Average Daily Traffic, MVM = Million Vehicle Miles

**Sources:**

Crash data for 2004 to 2006 from KYTC Data  
 Statewide Rates from KTC Research Report KTC-07-26/KSP2-07-1F, Analysis of Traffic Crash Data in Kentucky (2002 - 2006)

**Table 8: Crash Rates by Segment (Cont.)**

Route	Section	Begin Milepoint	End Milepoint	Total Crashes	Average Daily Traffic	Section Length (miles)	Exposure "M" (100 or 1 MVM)	Statewide Average Crash Rate	Section Crash Rate	Statewide Critical Crash Rate	Critical Crash Rate Factor
KY 876	1	0.000 (KY 595)	2.387 (Bogie Mill Road)	31	700	2.387	0.018	224	1694	494	3.43
	2	2.388 (Bogie Mill Road)	4.770 (Old Pond Way/Mule Shed)	22	1,300	2.382	0.034	224	649	413	1.57
	3	4.771 (Old Pond Way/Mule Shed)	6.528 (Willis Branch Road)	26	2,500	1.757	0.048	224	541	382	1.42
	4	6.529 (Willis Branch Road)	7.097 (I-75 Ramp)	16	12,800	0.568	0.080	224	201	359	0.56
KY 1156	1	0.000 (US 25)	1.352 (Boone Way)	5	1,800	1.352	0.027	106	188	502	0.37
	2	1.353 (Boone Way)	6.278 (Kentucky River Road)	24	800	4.925	0.043	224	556	391	1.42
	3	6.279 (Kentucky River Road)	9.376 (KY 169)	4	200	3.097	0.007	224	590	743	0.79
Man O War	1	6.561 (Nicholasville Road)	8.566 (Tates Creek Road)	267	31,900	2.01	0.700	242	381	317	1.20
	2	8.566 (Tates Creek Road)	10.285 (Armstrong Mill Road)	108	25,600	1.72	0.482	242	224	327	0.69
	3	10.285 (Armstrong Mill Road)	11.821 (Alumni Drive)	298	35,200	1.54	0.592	242	503	323	1.56
	4	11.821 (Alumni Drive)	12.792 (US 25 / Richmond Road)	224	44,800	0.97	0.476	242	470	326	1.44
	5	12.792 (US 25 / Richmond Road)	13.454 (Palumbo Drive)	238	32,800	0.66	0.238	242	1001	350	2.86
	6	13.454 (Palumbo Drive)	15.241 (I-75 / KY 1425)	608	40,350	1.790	0.791	242	769	316	2.43

Critical Crash Rate Factor >1, Section Crash Rate Exceeds Statewide Critical Rate (High Crash Rate Section)

Critical Crash Rate Factor <1, Section Crash Rate Exceeds Statewide Average Rate

Critical Crash Rate Factor <1, Section Crash Rate Lower Than Statewide Average Rate

**Notes:**

Analysis Period: 3 Years (2004 to 2006)

Crash rates are expressed in crashes per 100 MVM (100 million vehicle miles traveled)

Exposure (M) = [(ADT) x (365) x (Time Frame of Analysis (Years)) x (Section Length)] / 100,000,000

Section Crash Rate = Total Crashes / Exposure

Critical Crash Rate Factor = Section Crash Rate / Statewide Critical Crash Rate

ADT = Average Daily Traffic, MVM = Million Vehicle Miles

**Sources:**

Crash data for 2004 to 2006 from KYTC Data

Statewide Rates from KTC Research Report KTC-07-26/KSP2-07-1F, Analysis of Traffic Crash Data in Kentucky (2002 - 2006)

**Legend**

- Crash Rate Below Average for Road Type
- Crash Rate Exceeds Average for Road Type
- Crash Rate Exceeds Critical Crash Rate for Road Type
- Interstate
- US HWY
- State Route
- County Boundary
- Corporate Boundary

0 2.5 5 10 Miles

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Source: KY Transportation Cabinet, KY Office of Geographic Information, KY Infrastructure Authority

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Source: KY Transportation Cabinet, KY Office of Geographic Information, KY Infrastructure Authority



**Crash Report Analysis**

Because of the number of crashes within the primary study area, an additional crash analysis was conducted to look at severity and crash type.

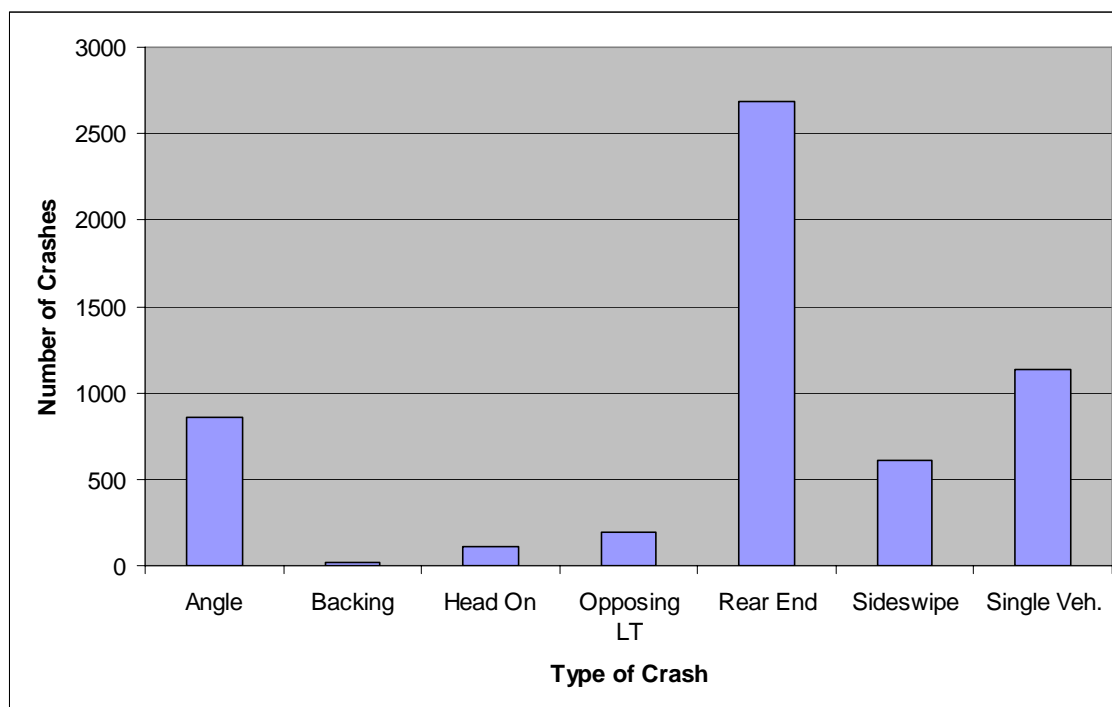
A breakdown of the crash severity for the entire area is provided below.

<b><u>Severity</u></b>	<b><u>Number of Crashes</u></b>	<b><u>Percentage</u></b>
Property Damage Only	4,318	76.8%
Injury	1,267	22.6%
Fatality	<u>34</u>	<u>0.6%</u>
	5,619	100%

The majority of crashes were property damage only (PDO) crashes (4,318). Over one-fifth of the crashes involved at least one injury, and thirty-four fatal crashes occurred between 2004 and 2006. Of the thirty-four crashes that involved a fatality, fourteen were angle crashes, thirteen were single vehicle crashes, five were head on crashes, one was an opposing left turn crash and one was a sideswipe in the opposite direction crash. The weather was not a contributing factor in the majority of the crashes.

A review of all crash types for the study area was performed to determine the most frequent type. **Figure 9** shows the results.

**Figure 9: Crash Types (2004 – 2006)**



The majority of crashes were rear end crashes (approximately 49%), although there were also a significant number of angle, sideswipe, and single vehicle crashes.

### **3.7 Multimodal Facilities (Pedestrian, Bicycle, and Transit)**

Currently, limited transit facilities exist in the study area. In Fayette County, bus service is offered through LEXTRAN. Within the study area there are three major routes:

1. Route 34: Centre Parkway – Hamburg Pavillion (serves the northeastern portion of the study area)
2. Route 36: South Side Connector (serves the northwestern portion of the study area)
3. Brown Route No. 2: Newtown – Bates Creek (serves the north central portion of the study area)

The other two counties do not offer regularly scheduled public transit service. Discussions are currently being made to address the extension of LEXTRAN service into some portions of North Jessamine County, but no definite plans have been executed.

It is KYTC's policy to consider provision of bicycle and pedestrian facilities as appropriate. Currently, the Lexington Area Metropolitan Planning Organization (MPO) has a regional Bicycle and Pedestrian Master Plan that includes some portions of Fayette and Jessamine Counties in the study area. The plan describes a "complete streets" plan that states that roadways designated as "complete streets" should be able to accommodate bicycles and pedestrians. Roadways within the study area that are part of the complete streets plan include US 27, Man O' War Boulevard, KY 1974, US 27, and portions of KY 169, KY 39, and KY 1980. The Master Plan also outlines a greenway trails program. As part of this plan, there is a proposed off-road trail that would extend from US 27 to the Kentucky River ending at Bates Creek Road. There are also various commuter and recreational bike routes throughout the study area. Commuter bike routes exist along US 27, KY 1980, KY 39 and US 25. Recreational bike routes exist on KY 39, KY 1541, KY 1981, KY 169, KY 1974, KY 1975, and KY 1156. Due to the rural and scenic nature of the study area, bicycling along the low-volume rural roads is very popular. The area also has potential to attract bicycle tourism.

### **3.8 Existing and Future No-Build Traffic and Highway Conditions Summary**

Based on the existing transportation conditions analysis, there appear to be a number of key transportation issues in the study area. These include the following:

- Major roadways in the study area, such as US 27, I-75 and Man O' War Boulevard, currently have very high traffic volumes.
- Many roadways in the study area have high historical growth rates, indicating continuing traffic growth.

- Roads such as I-75, US 27 and KY 1980 have high truck percentages.
- Sections of US 27, US 25, KY 1980, KY 1974, KY 169, KY 876, KY 1176, KY 39, and KY 1975 currently operate at a LOS E or F.
- Many sections of Man O' War Boulevard, US 27 and I-75 currently operate at LOS D.
- In 2040, sections along the majority of roadways in the study area will be operating at a LOS E or F.
- The majority of roadways in the study area have segments with a critical crash rate factor greater than one.
- Rear end crashes are the most common type of crash in the study area.
- The Lexington Area MPO's Regional Bicycle and Pedestrian Master Plan has designated several roadways in the study area for potential bicycle and pedestrian facilities.